GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED TO BEES AND HONEY AND HOME INTERESTS

ILLUSTRATED SEMI-MONTHLY

Published by THE A. I. ROOT CO. $1.00 PER YEAR MEDINA, OHIO

Vol. XXV. JAN. 15, 1897. No. 2.

STRAY STRAWS

FROM DR. C. C. MILLER.

THE HONEY-GEM recipe given on page 883 has been tried on a small scale at our house. I don't like it so well as the jumbles—too much taste of molasses.

IN REPLY to your question, Mr. Editor, I don't know of any objection to tall sections aside from not fitting supers; but then, I'm not acquainted with them.

BUCKWHEAT HONEY, as a food for bees, according to Herr Thiedemann, in *Centralblatt*, helps to prevent foul brood. I wonder if there can be any thing in that

J. B. KELLEN, editor *Luxemburg Bienenzeitung*, advises the use of pasteboard floors in hives in winter. Handy to draw out to clean the hive, without disturbance.

THE LEHIGH VALLEY is a railroad after A. I. Root's own heart. It not only prohibits the use of intoxicating liquors by employees while on duty, but tobacco also on passenger trains and at stations, and smoking in or about the shops.

WOOD STAYS wouldn't stay in brood-combs for R. M. Reynolds, p. 12. I reported exactly the same experience. Friend Reynolds, please tell us if you ever had any failure with stays boiled in beeswax. With such I've had success so far. But I use only one-fourth as much wood as you.

THERE IS a connection or relation existing between honey and buckwheat that does not occur to most people. The bees gather the honey from the buckwheat blossom, and the nectar is again returned to the buckwheat when it is eaten in the form of cakes.—*Farm Furrows, in Homestead.*

THE ANNUAL OUTPUT of honey in Europe is given in *Progres Apicole* as 80,000 tons, worth $11,000,000, with 15,000 tons of wax worth $6,600,000. Seems like a pretty big yield of wax, to get one pound to about five of honey. [These figures may be correct, but the amount of wax seems to be rather larger for this amount of honey. See estimate of the annual product for the United States at the close of this department.—ED.]

STOP YELLING about deep-cell foundation in the way you do on page 6, Mr. Editor, then stopping short just as we're ready for some disclosure. It's aggravating. If you've got scent of any thing worth while, tell. [Just have (*patients*), doctor. That is what a good doctor has, is it not?—ED.]

HONEY VINEGAR in 14 weeks. Mr. T. W. Cowan tells in *British Bee Journal* how he makes it. Put in a cask 1½ lbs. honey to ach gallon of water; add vinous ferment or common yeast; set in warm place; two months and three weeks from first mixing, clarify with isinglass, and in two weeks it's ready for market.

THE *British Bee Journal* says that the idea that Italians have longer tongues than blacks is now considered a fable, careful measurements showing no difference. [I suspect the *British Bee Journal* is right—at least, I doubt whether any living bee-keeper is any better able to decide this question than its editor, Thos. Wm. Cowan.—ED.]

HERR GUENTHER has found, in 50 years' experience, that queens fecundated late in the season prove good layers, while those raised and fecundated early seldom last long. [This is a good point, if true. As long as there is a probability of it, so much is to be gained or lost that it would be a good idea for our American bee-keepers to experiment, and decide the point beyond a question or doubt.—ED.]

PRES. N. E. FRANCE, at the Wisconsin convention, speaking of packages for extracted honey, said, "Some people advocate waxing the barrels to keep them from leaking; but my father says wax the cooper until he can make a barrel that won't leak."—*Amer. Bee Journal.* [Yes, I remember when I called on the Frances the old gentleman was very emphatic in saying that a barrel for honey did not need waxing. Their honey-barrels are made in advance, and

stored in a dry room. Just before the honey is put into them, the hoops are driven down solidly. Mr. France assured me that they never had any trouble from leaky barrels.—ED.]

TWENTY FIVE CENTS used to buy a corn-husker. Now the best machine for that purpose costs several hundred dollars. But think of the work it does! It takes the corn—stalks, ears, and all—as fast as two men can feed it, husks out the ears, and loads them on a wagon, then tears the leaves and stalks all to shreds, and carries them upstairs into the barn. And it never grumbles because there's no pie for dinner.

A MISTAKE occurs in that first recipe on p. 23. Instead of 3 lbs. it should be 10 lbs. lard. [Mrs. "Barney" made some most excellent honey-jumbles from the recipe given in GLEANINGS. I am rather of the opinion that the jumbles will be just as good with less lard—certainly much more wholesome. You know lard, or at least the excessive use of it, in cookery, is tabooed now by nearly all the medical fraternity. —ED.]

HONEY-JUMBLES. For the benefit of those who may want to try them on a smaller scale than that given p. 23, here's the recipe: 2 lbs. flour, 1½ oz. lard, 1½ lb. honey, 6 oz. molasses, ⅝ oz. soda, ¼ oz. salt, 1 gill water, ½ teaspoon vanilla extract. [It would be a good idea for you, doctor, to put all three of these honey-jumble recipes in your honey-leaflet, then the family can pick out the size that will best suit its requirements.—ED.]

ONTARIO BEE KEEPERS at their convention raised the question of government's "compelling bee-keepers to put upon the market well-ripened honey." I don't like that sort of compulsion. If I've only enough honey for my own family I don't want to be compelled to put it on the market just because it's well ripened. But if it means I sha'n't sell unripe honey, that's all right. Why not a law against unripe honey just as much as against "unripe" veal?

FAILING TO FIND any thing else to fight with you about, Mr. Editor, I arise to continue the quarrel as to the time for development of a queen. Seventeen days is an old belief, and it is known that it is not now true and never was true. Fifteen days is found to be the truth under normal conditions, and is so put down in such reliable books as Cowan's. Now, what business have you to strike an average between that error and that truth, and then say 16 days is about right? [I just won't fight at all—simply give up.—ED.]

R. F. HOLTERMANN, of the *Canadian Bee Journal*, is stirring up things by trying to get Canadian honey on the British market—shrewdly giving members of the Ontario Association some advantage—and by getting a meeting of honey-vinegar makers and consumers at the Toronto convention. [If Mr. Holtermann does not "look a little out" he will be stirring up the wrath of his British cousins. They do not take kindly to the importation of foreign honey into their market. What excites their indignation particularly is that the inferior grades of foreign honey have been sent to England and palmed off as English; but I presume the goods that Mr. Holtermann had in mind were first quality; but by a letter I have received from an eminent bee-keeper in England, it seems to be apparent that little if any thing, from a money standpoint, will be gained by the experiment.—ED.]

WISCONSIN reports for 1896 1,800,000 pounds of honey, and 20,000 pounds of beeswax. [These figures seem tremendously large, but they are within the range of possibility, for Wisconsin is certainly one of the very best honey-producing States in the Union. If every State averaged as well as this, then the total amount of honey would be 86,400,000 lbs.; but according to estimate made last fall (see Oct. 1st GLEANINGS), on the number of sections sold in the country, 50,000,000 (for both comb and extracted) would be a nearer figure. If this is correct, then Wisconsin produces $1\frac{8}{10}$ more honey than the *average* of the States. Indeed, there is no doubt there are single counties in Wisconsin that produce more honey than some whole States. But Wisconsin probably does not produce the largest amount of honey. California, by reason of its larger area, longer seasons, and greater variety of honey-producing plants, would run considerably in excess. I believe that somewhere rough estimates have been made as to the annual output for California, but I can not now put my finger on them. Granting it is in the lead, New York and Pennsylvania, and perhaps Illinois and Iowa, will each hold its own alongside of Wisconsin. But there are other States, such as Colorado and Arizona, that are rapidly coming to the front.—ED.]

PLEASE, SIR, Mr. Editor, what makes you box my ears for things I never did? On p. 7 you go to arguing about "sunken bottles" and things, and I never said a word about them. Go for Hutch. He's the "sunken bottle" man. Bless your heart! I'm for thin sections just as much as you, I suppose. What I'm fighting is the thievish plan of selling light-weight sections for full pounds. And I say if the grocer sells them that way, why shouldn't he buy them that way? [It is true, doctor, you may not have said any thing regarding the sunken-bottle matter; but what I was "boxing your ears" for was not that, but because you *persist* in saying the plan of selling thin sections is "thievish." I do not believe it is true that consumers have the idea generally that such sections weigh a whole pound; but 10 cts. is a nice even change; and if a section of honey is only

10 cts., people will buy it in preference to one that costs 15 or 18 cts. The dime is usually handy, and it is very easy to throw it out on the counter and walk off with the goods. The point that I think you overlook is this: Consumers are more apt to buy goods in ten-cent packages than in 15 or 25 cent sizes. That is the reason why manufacturers almost universally, where they can, try to put their products in such shape that they will retail for an even dime.—Ed.]

Then we have to get news from England about the uses of honey in our own national household.

The new Union evidently has a field here for the exercise of its talents, and a wide field it is, to find out where honey is used, for what purpose, how much, what quality, and at what price; and also where not used, and why.

Please tell Anthony Opp to desist from telling any more bear-hunting stories. They have a demoralizing effect upon Mr. Wilder, my friend and celebrated hunter. We prefer Mr. W. to stay in California; but that story, 18 bears in 20 days, leads him to cast longing eyes toward Arkansas. I have traveled with Mr. W. I know just how he feels—he feels for his rifle.

The fiber of the commom nettle is attracting some attention as a commercial product. Nettle-farming might be a very profitable industry in this State, for they grow to an enormous size, and bees gather a good quality of honey from the blossoms. A nettle-farm and an apiary would work well together, and the bee-keeper would be perfectly at home with the stinging vegetable.

There is much said of late about drawn combs, and I should like to know just what is meant by that term. Must we understand that a drawn comb is drawn to the full depth of the cell, and ready to cap as we find it in an ordinary section? or is a drawn comb merely a piece of foundation started or drawn out half an inch or thereabouts? From my experience I can recognize the value of the latter, but I have never had good results from comb drawn full depth, or from which honey has been extracted. Furthermore, bees will not work upon a section with full-depth cells as readily as they will upon new foundation. The late B. Taylor recognized this fact, and hence the invention of his comb-leveler. Therefore, please state the most profitable depth of cell in drawn combs. [By drawn comb we have meant deep-cell foundation, or comb with cells only ⅜ inch deep. Full-depth combs are not desirable or practicable for comb honey.—Ed.]

By R. C. Aikin.

ALFALFA-GROWING; ITS VALUE AS HAY; SOIL; IRRIGATION; A VALUABLE ARTICLE.

Since leaving my home at Loveland, Sept. 2, I have traveled through the territory just east of and parallel to the mountains nearly 200 miles. In that distance there is a large per cent of the country unsuited to bee culture because of lack of pasture. All that distance we were crossing the streams from the mountains that supply that district with water. For nearly 200 miles down the Arkansas River there is a strip of country from almost nothing to perhaps 10 or 12 miles wide that is partially irrigated and planted in part to alfalfa. Either side of the Arkansas River for many, many miles out from the irrigated strip, is a large territory covered only by buffalo grass, and would not support bees at all.

About the culture of alfalfa outside the irrigated land, it is somewhat experimental as yet, though it is grown in many places in a small way. I have found it in small fields in Eastern Nebraska and Western Iowa. A few days ago I saw a nice little patch in Page Co., Iowa, that was planted for hog pasture. It looked quite flourishing.

The alfalfa-plant seems quite tender the first few weeks after it comes up, and then is the time it is most likely to be killed. In my own locality they usually plant it in the spring with spring wheat. The wheat does not come off till July, so the plants get quite well rooted by that time, but give no crop that year. The second year it will give two fair cuttings of hay, and the third year three cuttings. I suspect some have become discouraged because it is slow at the start. Do not give up and destroy it the first season unless it is *very* thin. Remember that the roots enlarge for two or three years, and that a two-year-old root will grow two or three times as large a head as a one-year old. Sow it in the spring with grain, and the next year it will begin to "get there."

Perhaps this will seem to many a large amount of space to devote to a description of country, irrigation, and alfalfa culture; but I think when you have read this and what follows, you will feel that it is important enough

to find a place in the columns of a bee-journal. There are many apiarists in the alfalfa regions, and nearly every one of them is familiar with honey-plants and conditions outside of alfalfa; but there are thousands who know little or nothing of the alfalfa districts and the habits of the plants. Within the last year or so the bee-journals have reproduced cuts of alfalfa as they appear in Mr. Frank Benton's recent work. These illustrations are good, and I doubt whether they can be much improved. I will now speak of the plant in relation to honey production.

ALFALFA AS A HONEY-PLANT.

I count alfalfa as an unquestionably good honey-plant. I think it will probably not yield as rapidly as many other plants do; but for reasons that will appear later, it is perhaps as much to be depended upon. I have now spent seven seasons in Colorado in the alfalfa districts. In that time I have taken two big crops, one fair crop, and the others poor to very poor. The best crop in the seven years gave a gain per day of about 4 lbs., with the best days only 6 to 8 lbs., and such days *very* few. The average seasons the gain per day has been from 1 to 5, a gain of 4 and 5 lbs. limited to two or three days. In the poor seasons we could hardly get a gain of 4 lbs., the usual run being one to two per day. Why it is that the yield is so slow I do not know; but my observation so far shows that to be a characteristic of the plant. I have never known pollen to be gathered from alfalfa; and when the yield will give a pound and a half per day there is no pollen to speak of carried in from any source.

As explained in the former article, there is but little rainfall in Colorado except in mountions. This naturally gives much clear sunny weather, so that the bees can work almost every day. The nights are cool, as a rule, and possibly this is one reason why the daily gain is light, for the bees do not get out as early as when the nights are warm. There are some conditions under which the plant will not yield, though the bloom be full and apparently healthy and vigorous. The two seasons just passed I thought I should have a good flow, for the bloom was abundant, apparently the best for several years; yet this year (1896) the crop was the lightest in seven years, being almost a complete failure so far as surplus was concerned.

I have noted that some who have patches of alfalfa in the East report that the bees do not work on it. Mr. Hagan, of Rocky Ford, Colo., says his experience is that, on dry ground —that is, unirrigated, and of course suffering for moisture—there is very little nectar gathered. Some others also report no nectar upon non-irrigated land. I can not believe that these adverse reports are at all conclusive. The reports from the East are very limited, and possibly there was other bloom in greater quantity at the time which would naturally take the force. The fact that the non-irrigated fields in the West do not yield would be perfectly natural. We can not and do not expect any plant to yield when not in prime condition.

Irrigation, it seems to me, to some extent overcomes some weather conditions. The natural condition of weather in Colorado would be clear and dry, which would soon result in a complete stoppage of nectar secretion; but to turn on a refreshing stream of water until the moisture permeates the ground and all about the roots, it seems to me ought to produce nectar secretion. Clear, warm, and sunshiny above, and plenty of moisture beneath, is a condition we find present in some degree at all times here. Some water is being applied every day in the honey season, so that *some* fields ought to yield, even though a neighboring field be too dry. So far as I know, irrigated districts never have a complete failure of nectar there being sufficient to give winter stores if no more. I believe that alfalfa would yield in the East, and would be worked by the bees, if it were extensively cultivated. However, it does not seem to be a special favorite with the bees so as to attract them regardless of presence of other bloom. Sweet clover yields both honey and pollen, and is for some reason an especial favorite with the bees. It will be visited when in bloom, no matter what else is open; but alfalfa yields no pollen, and is not particularly attractive to the bees, and consequently does not make a showing when other bloom is more abundant.

As I have previously shown, there is a very large territory in Colorado that does not grow alfalfa. More than this, where it is grown, but a small per cent only gives pasturage. The first hay crop (I speak of the territory north of Denver, more southern latitudes come in earlier) is cut in June, just as the crop begins to bloom. This hay is generally counted on for horse feed, being rather coarse. The second growth is cut just before blooming, or at the very beginning of the bloom, is not quite so coarse as the first growth, and makes good cow hay. The third growth does not usually reach bloom, but is cut at the close of the season, making the finest and most watery or washy hay of the three crops, and is by many counted the best of the three for milk, but entirely too "soft" for work-horses.

In the rotation of crops, alfalfa meadows are broken and planted to wheat. Wheat and alfalfa are the main crops. The thick, tough tap-roots that go straight down into the earth are very hard to cut off; hence in plowing up these meadows so many of the roots slip by the plow, or for some reason grow again, that often a wheat-field will have in it a fair stand of alfalfa. Wheat harvest does not come for a month or more after the alfalfa begins to bloom, thus there is quite a little pasturage

for the bees from that source where such fields exist. Here and there will be fields grown for seeds. For a seed crop they prefer a field not too thickly set and not too wet. The scattering plants grow great spreading bushes, as it were, a single plant often occupying a circle of three feet in diameter when not crowded by others. These seed fields will be in bloom from one to two months, like the sweet clover, having both bloom and ripe seed at the same time, though not so much so as the sweet clover.

Now observe the foregoing conditions, and you will see that the simple presence of alfalfa is no guarantee of pasturage. There is always some in fence-corners, on roadsides, ditch-banks, and other out-of-the-way places that *matures* bloom; but aside from this it depends upon the use made of the crop, and whether the farmer is "up with his work" and cuts promptly, what amount of pasturage the bee-keeper gets. So far as I know, the conditions here described are in the main true of alfalfa districts in general, though there may be some conditions that change the details somewhat. The Arkansas Valley is nearly 200 miles further south than Loveland, and has a season almost if not quite a month longer. There is also quite a difference in the soil and water supply. Much more seed is also grown there than in my own territory, hence it is at present a better field *for honey* than my own. Water supply, soil, demand, whether for seed or hay, etc., determine whether seed or hay be grown, and these bear upon the pasturage question.

OUR GRADING-RULES CRITICISED AGAIN.

FOOLISH FADS IN GRADING; SHIPPING-CASES, AND SNOW-WHITE SECTIONS.

By B. J. Thompson.

In GLEANINGS for Oct. 15, pages 758–9, you have a short article on B. Walker's opinion of the rules of grading honey, and call for an expression of the opinion of your readers.

I heartily agree with Mr. Walker in his opinion as stated in that article, that "all of the grades are too strict over unimportant details." In GLEANINGS, Dec. 1, page 864, the editor speaks of the snow-white dress for sections and shipping-cases as a "foolish fad, and the sooner it dies out the better." Now, it seems to me if the demand for snow white sections is a foolish fad, then a set of grading-rules which demand that "both the wood and comb shall be unsoiled by travel stain or otherwise" is a "fad" and a very foolish one at that, and especially so when it is next to impossible to obtain honey that will fill the requirements of those rules.

In all the years of my bee-keeping I can not remember of having any honey that would exactly fill the present rule for "fancy," and very little No. 1; and yet every dealer who has ever handled my honey has given me credit for having as fine lots of honey as he ever handled. (I do not write the above to boast, but to show why I think the present rules of grading too strict and unjust.) If a person can secure a crop of "snow-white" honey, all right; but to make a grade of that kind when such crops are the exception instead of the rule is not just to the large majority of bee-keepers.

White honeys are not all of the same degree of whiteness, if such an expression is allowable; and some seasons the honey can be secured in whiter, nicer shape than others. Both of those factors should enter into the consideration of a set of grading-rules, to be just to all in all parts of the United States.

If sections that are not snow-white are just as good as the snow-white (and I can not see any reason why they are not), what possible harm can there be in having travel or propoiis stains on the wood, provided they are properly cleaned? Furthermore, I can see no detriment to the comb being slightly discolored even for fancy grade. The fancy grade calls for "All sections to be well-filled; combs straight, of even thickness." When a section is "well filled, comb straight," I can not see of what use the condition "of an even thickness" is, unless it is a point in favor of those who use separators. (I use 7-to-foot sections without separators.) If a comb is straight, and sections well filled, the condition of "an even thickness" is unnecessary, and only gives the purchaser a chance to be more particular, or find fault if he chooses.

Let us have a careful revision of the grading-rules, and let them be such that they will be a good practical guide to honey-producers. Give us something practical, and that we can use, even if some points have to be left to the decision of honey-producers in various parts of our country. The practical bee-keeper's good common sense will not let him go very far astray.

Waverly, Wis., Dec. 7.

[I believe all that you and friend Walker say is true. Acknowledging, then, that our present rules are faulty, what we need to do is to set them right. I wrote to friend Walker, asking him to submit to us another draft of the same rules, with all the objectionable features eliminated; but he was so crowded with work that he could not get to it. I therefore call upon you, friend T., to take them and redraft them. You have both the experience and ability to do it.

The *scheme* of our present rules is excellent, and all we need to do is to lop off some of the impracticable or impossible requirements. A slight change in the wording here and there will be all that is necessary, in my judgment. I said the *scheme* of the present rules is all right—that is, having several grades, such as "Fancy," Nos. 1, 2, etc., and then designating the source by "White," "Amber," "Dark," etc. Our commission men and bee-keepers have become used to the present rules, and, so far as possible, we should retain these features.—ED.]

FOREIGN BEES.

LITERATURE RELATING TO BEES IN BRAZIL, EAST INDIES, AND AFRICA; GOVERNMENT AID TO BEE-KEEPERS.

By W. K. Morrison.

It seems that many of your readers want to know more about the foreign bees mentioned by me previously, so I shall add a little to what has already been said, to reinforce some of my former statements and show what has so far been discovered. We will start first with South America.

Capt. Hall, in the account of his travels in the southern continent, gives a most minute account of the keeping of stingless bees by the natives; but as this book is easily accessible I will pass it by now. The same may be said of Capt. Beechey. The works of Azara and Geoffrey St. Hilaire are not common, and I have not seen them for some time; but Azara had a good deal to say about the bees of southern South America, and first mentioned the now celebrated honey-gathering wasp. The Europeans said that Azara was either fooling or had been imposed on; but Azara held his ground, saying he was not mistaken. Geoffrey St. Hilaire was able, however, to corroborate all that Azara had said, and there the matter rests. Spix and Martins, the great explorers of Brazil, seem to have come across honey-bees of different sorts. Their book costs so much ($170) that I have been unable to get to see it. Bates, the author of that fine book, "A Naturalist on the Amazon," mentions the fact that he saw a native take two quarts of honey from a nest of *Melipona fasciculata*. He says that the hive consisted of an immense number of individuals. He further says that they work pretty much as ours do, only they seem to use mud instead of propolis. They have no sting, but their bite is nearly as effective in keeping off intruders. The largest size he saw was a little less than our bee. I have tried to get these bees from British Guiana, but without success.

Mr. Paul Marcoy, who has written one of the finest books of travel ever penned, mentions bees. He is an artist, a naturalist, traveler, and ethnologist all in one, and, as might be expected, his book is a model (Blackie & Sons, Edinburgh). Here is what he says:

"Two kinds of wax are collected by these Sensis—a white and a yellow. They have a third kind, black; but as they obtain it by mixing lampblack with the natural varieties, we may pass it by. The white wax is produced by a bee called the *mitzqui*, the yellow by the *yacu*. The first of these hymenoptera is not larger than a small fly; the second is about the size of the common bee. The habits of the two insects are similar. They establish themselves in the hollow interior of cecropias (a tree), which are almost always pierced where the branches spring from the trunk, selecting by preference such of these trees as grow around the lakes of the Ucayali (between Sierra Blanca and Nauta), rather than those on the banks of the great river. This preference is accounted for by the tranquility which they enjoy in the interior of the country, where the waters are rarely furrowed by the canoes of the natives. To possess themselves of the wax and honey of these bees, the Sensis set a light to a pile of green wood around the cecropia, to which they have tracked them, and, after having dispersed, suffocated, or burned the laborers, they fell the tree and appropriate the fruits of their industry."

My own opinion is that the *Melipona* would succeed where moths and ants are troublesome, and it is generally considered that the difference between them and *Apis*, structurally speaking, is very slight. They would seem by all accounts to be good wax-makers. I have seen several species, but never a nest of the large kinds. The honey of the small kinds is very good, and most of the bee-hunters of Venezuela prefer it to our own kind.

In regard to the East Indies, we are well off for information. Many travelers have touched the theme. Dr. Alfred R. Wallace, the friend and colaborer of Darwin, has given us a most graphic account of *Apis dorsata*, that leaves little to be desired. You will find it in his well-known book on the Malay Archipelago.

Here is what Forbes says in his "Naturalist's Wanderings" about *Apis dorsata*:

"During the brief twilight, after the sun had disappeared, the air for sometwenty minutes was suddenly filled with the hum of bees (*Apis dorsata*) as if a swarm had alighted among the flowers of the gum-trees. Just before daybreak, while it is still dusk, the morning air is in a similar manner inundated with their noisy hum. This singular habit of these bees in feeding in the sunless hour of the morning and evening I was totally unaware of till I came to live at Fatunaba, where, close to our door, a grove of these trees grew. In the evening the *melaleuca* (a fine honey-tree) certainly becomes more fragrant than it is at mid-day; but I could not ascertain what would be very interesting to know, if its flowers exude their nectar or shed their pollen more freely late in the evening and early in the morning."

This query is easy enough to answer. The rays of the tropical sun bear down so directly as to dry the nectar out of the flowers by 10 o'clock A. M. Moreover, there is hardly such a thing as twilight in the tropics, and bees soon get to know that, when the sun goes down, there are only a few minutes left to get their fill and fly home, otherwise they will have to stay out all night, so they troop home just as they do when a shower is coming. Again, during the night the flowers collect more nec-

tar; and as the sun rises all at once, the bees simply "swarm" to their work and "make honey while the sun is obscured by morning mists." That keen observer, Mr. F. W. Burbidge, in his "Gardens of the Sun," gives us a short but excellent account of the apiaries he saw in the East Indies. He says:

"Here at Kian, as at all the Dusan villages along our way, we noticed large quantities of tame or domesticated bees. These are kept in cylindrical hives formed of a hollow tree-trunk, and are placed on a shelf fixed under the overhanging eaves of the houses. In several instances the hives were on shelves inside the houses, a hole being made through the "ataps," corresponding with the hole in the hive, so as to allow egress and ingress—a plan similar to that adopted by the bee-keepers of Kashmir." Who says the house-apiary is something new? It is certain the bees seen by Mr. Burbidge were not *Apis dorsata*. What were they? And yet there is no more wide awake man in the world than the gentleman just mentioned.

Next on our list is Africa, and one quotation will do for this continent. In "Through the Kalahari Desert," by Farini, he has this little narrative:

"'Are you sure, Klas,' said I, 'that it is a bees' nest and not a wasps'?'

"'Yes, Sieur, it is a bees' nest, and there is plenty of honey. I'll show Sieur where it is, and then he can see for himself. We find them in aard-vark holes and clefts of rock in the mountains, the comb quite open, and the bees clustering outside.'"

"This was something so entirely new to me that I made Klas take me next morning to the spot, while the Bushmen organized a bee-hunt. Taking a little water in a broken ostrich-egg-shell they placed it near a bunch of flowers, and watched for the bees coming to drink. The thirsty insects are always on the outlook for water; and as soon as one finds it he quenches his thirst and goes off to call his friends and neighbors to the spot.

"It was not long before first singly and then in twos and threes, and lastly in dozens, the bees came and settled on the top of the eggshell, which one of the Bushmen then took up and held aloft as he slowly followed the direction in which the insects took their flights, the thickest of which the water-bearer followed, while others were told off to track out the others. This was now no very difficult task, for the bees were so thick that their flight could be traced by the sound of their humming.

"At last we came to a wait-a-bit bush, round which clustered myriads of bees, just as if they were 'swarming' there; but the Bushmen said there was a comb inside. They did not take any notice of us; so, after watching them for a bit, I took a bunch of grass and set fire to it, causing a dense smoke to arise under them. This had the desired effect. Those outside became stupefied and fell down, while the others, filling themselves with honey, offered no resistance as I reached carefully into the bush so as to avoid disturbing them, and at the same time to prevent the terrible thorns from tearing my hands. The combs, seven in number, hung crosswise from the branches—the middle ones the longest, and the others growing shorter the nearer they came to the outside. Both comb and honey were as white as snow. It must have been a young swarm, as there were no young bees, and the comb was new, never having had brood in it to discolor it. I gathered up some of the bees and put them in a reed, but, unfortunately, was not able to secure the queen."

Schweinfurth noted that the bees in Central Africa were closely related to the Egyptian race. Slatin Pasha, who has recently escaped from Khartom after ten years' imprisonment, says in his new book, "Fire and Sword in the Soudan," that one of his carriers was killed by bees he attempted to rob. He says the poor fellow died in great agony. I suspect that Africa is the original home of our bees; and, in fact, it is extremely likely, since the modern anthropologists are pretty well agreed that Africa was the home of our race, though we used to be told once that we were Asiatics. Has the bee followed us in all our wanderings?

Now as to government aid to bee-keepers. I for one am not opposed to it; but we must be careful. The hunt for new species alone would furnish a great chance for a number of junketings and also a lot of nonsense. We shall have to get a very much better administration of the Agricultural Department than we have had heretofore; in fact, I distrust their ability altogether. Why is the apicultural division put in with the entomological department? Scientific men generally class bee-keeping as belonging to botany; that is, the fertilization of flowers. The botanist can tell us more news than the entomologist. Hermann Müller and Darwin have placed this beyond the shadow of a doubt. Pasturage is the great problem of the future. But this is another story.

I think if the government were to give the Smithsonian Institute a grant of money for this object for a term of years, it would satisfy everybody, the money to be granted for the express purpose of making experiments on the different species of bees, and their influence on flowers. The Smithsonian could attack this job better than any one else, and, moreover, get the assistance of the whole scientific world. They would be able to see the job from all sides. Still, there would be plenty left for the Agricultural Department to do, such as gathering statistics, getting uniformity among hives, promoting the sale of honey, and so on.

As to getting new bees, the Smithsonian can

do it better than any one else, and at less expense. We can keep our weather eye open.

There are many other references on bees in modern books of travel; in fact, some just published mention them, like Lawrence's Kashmir, where the bee-men know enough to feed millet meal for pollen, and keep the hives inside; but enough has been noted to show how matters stand.

Devonshire, Bermuda.

DEFUNCT BEE-JOURNALS.

THE FIELD OF BEE JOURNALISM IN GENERAL; IS IT A BAD POLICY WITH THE OLD RELIABLES TO BOOST ALONG NEW RIVALS?

By Dr. C. C. Miller.

Some time ago a friend of C. J. H. Gravenhorst, the able editor of the German illustrated bee-journal, applied to the latter for a list—for what purpose I don't know—of bee-journals that had started and had ceased to be published. After making up a rather long list of such journals that had lived and died across the water, Mr. Gravenhorst referred to me to give a list of such American journals. I in turn asked help of the inhabitants of Medina, and it has occurred to me that it might not be a bad thing to make some sort of permanent record of this list before some of the names are entirely forgotten, and possibly the few not here given may have their names supplied by some one else. Here is the list, so far as I can give it:

	Began.	Discontin'd.
Bee-keepers' Magazine,	1873	1889
Moon's Bee World,	1873	1877
Bee-keepers' Guide,	1876	1890
Bee-keepers' Exchange,	1879	1883
Western Honey-bee,	1879	1880
American Apiculturist,	1883	1895
New England Apiarian,	1883	1884
Kansas Bee Journal,	1884	1885
Bee-keepers' Advance,	1889	——
The Bee-hive,	1893	1893
National Bee Journal,	——	——
Canadian Honey Producer,	——	——
The Queen,	——	——
California Apiculturist.	——	——

The above list of the dead considerably outnumbers the list of the living. Old age was not the cause of death, the oldest being the first on the list, and that died when only "sweet sixteen," while GLEANINGS shows no signs of decrepitude as it enters its 25th year; and the only older one, first-born of all, the *American Bee Journal*, which first saw the light in 1861, 36 years ago, was never in so full vigor as now.

Bee-keepers are likely to be enthusiasts, and once in so often enthusiasm leads to mania. Sometimes it's a mania for invention. Indeed, like the chickenpox and measles, every bee-keeper must go through a more or less severe siege of this mania for invention. Possibly there's a defect somewhere in the make-up of a bee-keeper who never thought *he* could invent a hive. Then there's the mania for entering the list of supply-manufacturers and queen-breeders. For a considerable time I have been conducting a department in the *American Bee Journal* in which I attempt to answer all sorts of questions about bee-keeping, and you would be surprised to know how often it happens that questions of the most elementary character, showing that the man has neither knowledge nor experience, come from one whose card on his envelope proclaims him "Breeder of Choice Italian Queens." Not long ago I had a letter reading somewhat after this fashion: "I began this year for the first time with 6 colonies, and increased to 16. Next year I intend to increase to 75, and to go into the business of queen-rearing." He may not get his 75; but the probability is that the list of queen-breeders will be increased by one more. But what kind of queens?

The mania for publishing a bee-journal comes later in the life of a bee-keeper, is not so widely spread as other kinds of mania, but more disastrous in results. The victim is cured of his infatuation only at the expense of a goodly number of dollars, belonging either to himself or to some one else. It seems a little strange that men of bright parts and apparently good judgment should be deceived into making a losing venture in plain view of the wrecks of the majority that have preceded him. Probably the allurements are not the same in all cases. In many cases a new journal is started because of apparent local needs. The bee-journals already in existence fail to fit the needs of the county in which I live, in some particulars. What's the use of occupying space with talk about sage and alfalfa honey, when there's nothing of the kind within hundreds of miles? So it will be the wise thing to have a McHenry Co. Bee Journal, in which the wants and needs of McHenry Co., and of McHenry Co. alone, shall be considered. But when I come to start the paper, which at the utmost could have only 500 to support it, and get only 100 of the number as actual subscribers, the thing begins to look different. True, I had all sorts of encouragements from every one whom I consulted. "Just the thing, and you're the man to take hold of it." Why couldn't some have the courage, the true kindness, to say to me, "The field's already overworked. Others have lost time and money by it, and the chances are greatly against your success"? It might be a good thing for the bee-keepers of Ohio if they could have an able journal devoted entirely to the interests of their own State; but the field is so limited that Ohio bee-keepers will do better to join hands with Alabama, California, and other States, in supporting one or more journals of more general character.

In some cases a bee-journal comes to the birth, not because of a crying need for it, but because the would-be editor recognizes in him-

self a born fitness for editorship such as doesn't yet exist. There is a lack in bee-literature. The bee-journals already published are not what they ought to be. He will give the fraternity just what they need, something progressive, and not keep thrashing over old straw from which the grain was winnowed years ago. But after he has fairly launched on the sea of journalism, it begins to dawn on him that, in spite of his great talent and peculiar fitness, bee-keepers can not be made to see it in the same light, and will still persist in being satisfied with the old standbys. Subscriptions do not pour in as he anticipated; and as something more than two or three hundred subscribers is needed to pay for setting the type, to say nothing of ink and paper, there's nothing left to pay for editorial labor; so, after the struggle of a few months or years, the project is given up, and the brilliant journalistic talents allowed to rust because their owner was born in an unappreciative age.

Bee-journals already established are themselves to blame somewhat for some of the disappointment and loss resulting to those who never should have entered the field. Not to appear underhanded in my accusations, I will arraign GLEANINGS on this charge. Now stand up in a straight row, Mr. Editor, listen to my charge, and see if I don't tell the truth. There comes the initial number of *The Front Rank Bee-keeper*, and you feel that you must give it a free advertisement. If you don't, the publisher feels defrauded of his natural and inalienable rights, and does not hesitate to mention in print the mean spirit you have shown. Now, what kind of business policy is that on either side? Suppose Smith starts a store in a new place where Jones has been for years the leading merchant. Jones rushes to the newspaper office and pays for the "ad" that Smith has had inserted. Some might praise Jones for his courtesy, but more likely he'll be called a fool. Merchants don't do business in that way. Is there any reason why the code that prevails among rival merchants should not prevail among rival papers?

You may say that, whether the code should be the same or not, the fact is that it is *not* the same, and that it is only newspaper courtesy to make kindly mention of a rival enterprise; at least, if it is not common courtesy it is sometimes done, and it's an act of kindness to mention favorably the new candidate for public favor. I beg pardon, it *isn't* kindness; at least, it generally isn't. In your heart you know there isn't one chance in ten, if in a hundred, that the venture will be profitable, and the sooner the publication stops the less will be the loss. But your words of commendation — and you try to commend all you can without lying — help to keep up hope; for if an o'd journalist approves, there is certainly no reason for discouragement. Then, too, your mention makes more or less call for sample copies, and possibly a few subscriptions are sent in just on the strength of your recommendation. So you have helped to keep up the delusion just a little longer, and what good have you done? — merely helped to prolong the agony in a case where you were almost sure death must inevitably come. Better let your silence help to kill it the sooner, and thus end its misery.

Marengo, Ill.

[When you asked me to furnish you a list of the bee-papers that had once lived and died, I thought perhaps half a dozen would very nearly cover the number; but when I came to look over our back volumes, representing all the bee-papers, both living and dead, I was surprised that the list should be so large. Surely, in the bee-journal line also the dead greatly outnumber the living.

There were some bright progressive men who were at the editorial helm of some of these bee-papers — men, too, of experience in the publishing business. If *they* have made a failure of it, those with no experience who are contemplating embarking in such a doubtful enterprise would do well to pause long enough to never embark.

With all the experience the editors of the old existing bee-journals have had, it is doubtful whether, if they were to sever their connection with their papers, they would be able to start another bee-paper that would live and pay expenses. The fact of the matter is, the old reliables have come to be so thoroughly intrenched that the new rivals have almost no chance whatever—at least, that list of the dead as compared with the living seems to look decidedly that way.

The trouble is, the number of bee-keepers in the country is comparatively small; and among that list the number who take a bee-journal or bee-journals is smaller still. We have on our books something like 100,000 names of *bona-fide* bee-keepers. Of this number, not over 12,000 take any bee-paper. As a general rule, one or two bee-journals seem to be all that they will take. What show is there, then, for a new candidate, without experience, without much capital, without the coterie of experienced writers, to go in and divide that patronage, especially when the price charged is often equal to that asked by the stand-by existing journals?

In saying this I am not trying to throw bricks at new bee-papers over the shoulder of Dr. Miller; neither am I afraid they will cut down our patronage, for they have not. Indeed, our circulation, until these hard times came on, kept right on at its old pace the same as *before* the rivals were in the field; and even now it reaches very close on to 8500.

Well, doctor, since you have asked me to stand up in a straight row I shall have to confess that, when GLEANINGS has acknowledged the arrival of a new rival, it has done so purely out of editorial courtesy, and because it would have looked mean, as you intimate, to ignore its appearance upon the field; but I believe, as you say, that it is not courtesy nor a kindness. For instance, suppose that the old established journals had refused to recognize the initial numbers of many of the above defunct list; the probabilities are they would have died sooner, and thus saved their publishers a considerable amount of money. Whether those same publishers would have appreciated that at the beginning is very doubtful; but if living now, I am sure they will realize the truth of it as they never saw it before.

WOLVES AND WILDCATS.

SOME "LIVELY" EXPERIENCES.

By E. France.

Forty-one years ago this winter I went from the State of New York to live in Iowa. I was then 32 years old. I settled on the east bank of the DesMoines River, 27 miles above Ft. Dodge. There were very few settlers there at that time. I took up a quarter-section of government land, built a log house, and worked on the farm summers and trapped winters. Wild animals were plentiful there at that time.

The first and second year that I was there we had very hard winters—cold, and deep snows. The wolves hovered around the settlements in hopes to get something to eat. I would see them almost every day—single, or two or more together. At one time I saw 13 in a drove. At another time I wounded a deer just at dusk, but did not get it that night. I went the next morning to find it. I found its bones, but all the meat was gone. Away from the bones ran a troop of wolves and foxes. They ran across the narrow river bottom and up on the grassy bluff, then stopped to look. I counted 32 wolves and a few foxes, so you see there were plenty of wolves in the country. Were they dangerous to human life? Not much danger from a single one; but when in packs they were a litttle risky.

There were five persons killed by them in Iowa in the winter of 1856. But the trappers soon thinned them out.

The second winter that I was there I got a little scared one night when I was trapping up a creek near my place. I would go up as far as I could, and get home in one day. I wanted to go farther up the creek, so I took some bedquilts and something to eat, intending to go up as far as I could, stay over night, and come back the next day. I went up about 15 miles. The upper part of the creek was all prairie. After I got above where I had trapped I found a large beaver settlement among the ponds. There were three quite large willow-trees, about 25 feet high. I thought that would be a good place to camp near those trees. In case the wolves got after me in the night I could climb the trees. But I had a few traps yet not set, and I wanted to see more of the creek further up; so I went on up five miles further, and got all of my traps set. Then by the side of a beaver-pond, in a little clump of small willows, I fixed my camp. I cut with my knife a large bunch of dry grass for my bed, wrapped my blankets about me and lay down to sleep, and was soon dreaming about wolves gathering to devour me. I woke up, and, sure enough, the wolves were howling in every direction. I was sorry that I had not stopped down by those three willow-trees. In fact, I was quite uneasy. But I could not reach the trees now, and made up my mind to stand my ground. This was in November. The ponds were not frozen over, and the grass was not burned off. I had no gun, but had a good hatchet and knife, and a big dog. I could set the dry grass afire if I must, but did not want to if I could help it. The wolves came nearer, and appeared to be more of them. The dog growled and barked. Pretty soon the wolves stopped howling. Were they sneaking in on me, or had they given up the job? I lay there. The moon came up. The dog went to sleep, and so did I. I heard no more of the wolves. I got up at daybreak, ate my breakfast, and started down the creek to see my traps. The first trap I came to, set for a mink, baited with beaver-meat, had a wolf in it. I skinned it, and skinned three more near there. I have thought, since then, those four wolves getting trapped that night saved me, or, at least, saved me a fight with them. I stayed in my camp there several nights after that, but was not disturbed again.

The next winter I trapped on the same creek again, but had a horse to ride, and many a chase I had that winter after wolves on the prairie—not much snow. My dog was a large half-breed grayhound, and liked the sport as well as I did. The horse was a good runner, and liked the fun too. The wolves would be lying in bunches of unburned grass; and when I came near they would start out, then here we would go. I seldom ran over a mile—usually not over half a mile. The dog would stop the wolf and fight him. I would come up soon, and with my hatchet finish the wolf, skin it, and then go on. Sometimes the horse would see the wolf first. He would then jump ahead so suddenly that I would be thrown back behind the saddle; and once I remember I went clear back over the horse's tail on to the ground. I alighted on my feet, but was soon in the saddle again in full chase after the wolf.

I will tell you a little laughable story of a wildcat capture. I was trapping on the Little Sioux River in the winter time, in company with a young man. We had caught several cats in our traps. One day, after a little fall of snow, we were walking up the river on the ice. We saw a cat's track going up the river, and we followed it. It went straight up the steep bank of the river, and went into a hole under a cottonwood-tree. As I had a trap with me I went up to the hole to set it to catch the cat when it came out. I had my gun in my hands, and I poked the muzzle into the hole, and put my head partly into the hole to see what I could see in there. It so happened that the hole went back only about six feet. The cat was back in the further end. It being dark in there, or may be I was snow-blind, I did not see the cat at first; but soon my eyes began to see, and just then I saw two bright eyes, and heard a

deep growl. I knew the cat was coming out, and there was hardly room for it to pass my head. I had my right hand on the gun-lock. I raised my head and gave the cat a "snap shot." The ball struck it in the breast and killed it. But in her spring to get out she landed on my left shoulder, bleeding like a stuck hog. My dog, always at my heels, bounded up and grasped the cat, and also got my coat-collar in his mouth. Being a heavy dog, and stout, he took cat and hunter down the steep bank on to the ice, and tore half my coat off. There we were, hunter and dog, cat and gun, all whirling around in the light snow. The blood from the cat was all over in the fresh snow. My partner was terribly scared. He got hold of me as soon as he could, and helped me up. He did not stop to see that the cat was dead. He thought I had shot myself, or that the cat had hurt me. He thought all the blood was coming from me. I just looked and laughed, and examined myself, and found that I was not hurt.

"Well," said my partner, "if that is the way to capture wildcats, you can have all the fun to yourself. I don't want any."

The wild cat is a pretty savage chap if you get it cornered, but usually very shy, and will keep out of your sight if it can. If caught in a trap it is ready to fight if you give it a chance. Walk up to one in a trap, and it will come toward you as far as the trap-chain will reach, and stand ready to fight, and growl like a big dog. I take my hatchet in hand, go up as near as I can and be out of reach of its paws, then make a few false blows near it, with the hatchet, as soon as it will let you do that without striking back at you, then reach a little further, and hit it on the head. It is not hard to kill. A quite small blow will drop him.

I once saw one that was tamed. It was taken when very young. It was four years old when I saw it. It was a great pet, and appeared to be as safe a playfellow as any other cat. There was a four-year-old boy in the family, and boy and cat were great friends, and played together, rolling and tumbling about the floor, sometimes the boy on top and sometimes the cat. The boy would pull the cat's legs, and get his hands in its mouth, but the cat did not bite or scratch him. But let a strange dog come around the house, and the cat would bounce on to him and comb his hide in good shape. Very few dogs can whip a wildcat.

My story is getting almost too long. I was intending to write up some of my adventures with wolves in Wisconsin, but will leave that for another chapter.

Platteville, Wis.

[Some time ago our friend Mr. France wrote us, asking if a wolf-story or two, drawn from his own experience, would be acceptable for GLEANINGS. I replied that it would, that variety was the spice of life. He is one of the old pioneers, and one at whose feet it is a pleasure to sit and listen. As I know by experience when I visited him, he is full of the experiences of pioneer days; and if what he says does not relate to bee-*keeping*, it is a bee-*keeper* of no mean order who is telling the story. If our readers do not like such "diversions" let them speak out.—ED.]

A NEW SYSTEM OF TAKING COMB HONEY.

HOW TO GET THE BEES TO FILL THE OUTSIDE SECTIONS AS QUICKLY AND AS NICELY AS THOSE IN THE CENTER OF THE SUPER; A VALUABLE ARTICLE.

By S. T. Pettit.

Doubtless all close-observing comb-honey producers have noticed that the bees generally commence work at or near the center of the super, and that the work extends outward, the front generally being reached and finished first. From this we can readily understand that, while the center and front sections are ready to receive another super under them, they must wait until more work is done upon the side and back sections.

Now, as the bees come in they generally go up somewhere near the center; and as they find the sections advanced well nigh to completion, the honey must go beyond. Bees pass slowly and reluctantly over well-filled combs or capped honey in search of store room. It is obvious that this causes delay and loss of time, and is a strain upon their energy and industry. In course of time another super is given, and a similar process, though in a less marked degree, is repeated.

If by some simple means not distasteful to the bees we can cause them, as they come in from the fields, to separate and distribute themselves to the sides and back end of the super, work at these points will generally commence and keep pace with the work at the center.

Right here I may be allowed to say that my new system accomplishes this desirable feature most admirably, and I will now proceed to give it.

I get out two wedge-shaped pieces of pine or basswood for each hive I expect to use during the season. These are one inch square at one end and one inch wide at the other end, which is brought down to a feather edge, and of the same length as that of the hive. Now, when the bees begin to suffer with heat and for want of more air, with a suitable lever, after giving the bees a whiff or two of smoke, I pry up the front of the hive and slip under each side of it one of these wedges; this gives an entrance 1⅜ inches by the width of the hive. This large entrance and elevated hive, by supplying lots of air and ample roominess, comforts the bees and retards swarming.

But the *particular point* to which I desire to draw attention, consists in the trick played upon the bees, which causes them to distribute

themselves to the sides and back end of the super. For a short time after raising the front end of the hive, the bees, as they come from the fields, will seem a little confused when they find the bottom-bars out of reach; but they will soon find a new way up, some going to the right and some to the left, going up the sides of the hive instead of the middle, as formerly. The wedges close the openings and form continuous passages up, and some will march right along toward the back end until they can reach the bottom-bars. This places the bees with their loads just where wanted. Now see —this is all quite simple, and not at all objectionable to the bees.

Permit me to say I have carefully watched the process of comb building and filling under this system; and in some cases, though they are the exceptions, I have found the outside sections rather ahead of those near or at the center—one very important point gained.

But there is yet another new and valuable feature to be described. First, however, allow me to say that we have often, to our sorrow, found that the outsides of the outside sections, though fairly well filled, are, at least a good many of them, but poorly capped. This has often been a sore trial—so many poorly finished sections after looking so repeatedly and waiting so long.

It always seemed to me that, if more room could be furnished, more bees could be present, and thus a more uniform and the necessary heat kept up day and night at the outside of the outside sections; then the bees would feel and act like those farther inside, and would go on and finish up the job "in a workmanlike manner." But the difficulty would always come up that, if more space was given, it would only be filled with honey in poor shape.

At length I conceived the idea of giving two bee-spaces by putting in a divider to divide the extra space into two bee-spaces. Following up the idea I set myself at experimenting to test what seemed to me so full of promise. After experimenting with a good many different devices with more or less success, I tried the one which is here described, and it has given very good satisfaction indeed.

It is simply as follows: A piece of basswood or pine, about a sixth of an inch thick, and just the width and length of a separator, is bored as full of $\frac{5}{16}$-inch holes as the wood will stand and not split to pieces, and five $\frac{1}{4}$ inch strips are nailed across it. These are turned outside against the wall of the super, thus forming two bee-spaces instead of one. The bees cluster on both sides of the divider, and pass freely both ways through the holes, and the work goes right along in good shape.

I tried a few with $\frac{3}{8}$-inch holes, with satisfactory results.

Notes.—Nothing is gained by giving more than two bee-spaces.

Dividers made of slats $\frac{1}{4}$ inch apart leave the sections ridgy, reminding one of a miniature washboard, and, besides that, some brace-combs appear between the sections and divider.

I coined the word "divider," or, rather, applied it to the new device. I hope it will do. This system is applicable to all kinds of hives, and the cost is a mere trifle only. I have no supplies for sale, nor have I any interest in that line of business. Free to all.

Belmont, Ont., Dec. 26.

[Mr. Francis Danzenbaker has for several years advocated the use of deep entrances in the production of comb honey, and accordingly on all his hives he has what he calls his reversible bottom-board, one side of which has raised a rim making a $\frac{3}{8}$-inch space, and on the other side a deep rim, making a 1-inch space. In hiving swarms, or in the production of comb honey, he uses this deep space; but his argument has been that it forces the bees to get their honey away from their entrances, where it is cold, up into the top of the hive or super, where it is warm. I believe he never claimed for it, however, that it resulted in the equal distribution of comb-building and comb-filling.

As I understand it, your long wedges accomplish practically the same results as Mr. Danzenbaker's reversible bottom-board, only that he has a space of equal depth under the frames from front to rear. I hope others will report upon this during the coming season, and give us the result of their findings.—ED.]

WINTERING BEES IN A BEE-HOUSE.

Question.—Would bees winter safely in a house built for them, where the temperature might be nearly as low inside the house as outside, providing it were so constructed that each colony would be inclosed in chaff packing, the same as in a chaff hive, with arrangements to close the outside entrances on the approach of cold weather, and give them ventilation from the inside, where the wind can not blow in upon the bees?

Answer.—It would be hard to tell for a certainty about this matter, without having tried it for a term of years. Bees often winter well with protection, and sometimes equally well without it. They are lost, too, under precisely the same circumstances. Low temperature is the demon which slays our bees more surely than any thing else in winter. If we had warm weather all the year round, here at the North, our wintering troubles would be at an end. Whether protecting each hive separately would overcome the trouble, which is almost sure to result where bees are kept in a continued low temperature, as they must be by such a plan as is proposed, is somewhat doubtful. Theoretically it looks all right; but so far as my knowledge goes, and from what I have gathered from others, such a mode of wintering has never been

made a success. I am of the opinion that the bees would winter much more successfully if left out where the snow could come up about the hives so as to partially cover them, and where the sun could shine on them whenever it is not obscured by clouds. My advice would be, not to put bees inside a cold repository; but if you do, keep its temperature up to from 42 to 48°, or leave them out to get the advantage of outdoor wintering. As a general thing it is best to adopt the method that has most generally proven safe with the main part of our bees, and stick to it. If we are not fully satisfied with this, then set apart a certain portion of the apiary for experimental purposes, till by experiments we have proven what is best for us in our locality, when we can then serve the whole apiary according to the successful plan, without danger of losing all our bees on some untried venture.

HOLES THROUGH COMBS.

Question.—Do bees ever freeze? I find little clusters of bees away from the main cluster, in my hives, dead, and a neighbor tells me that they were frozen to death. He also says that, if I will make holes through the center of the combs in the fall, it will obviate this trouble. Is he right?

Answer.—In reply to this let me give a little of my experience and observation during the past quarter of a century. As fall approaches, if we minutely examine a colony of bees we shall find that the activity manifested during the spring and summer, in the interior of the hive, becomes less and less, so that, by the middle of October, in this latitude, all brood-rearing has ceased, and the bees have become partially dormant; still, so far they have not packed themselves away in a snug cluster, or compact shape, for winter. Every opportunity given by a warm day is improved to void the fæces, so the bees may be prepared for a long cold spell when such occurs. As the weather grows colder, the bees contract their cluster, many packing themselves away in the cells till the smallest possible space is occupied by them, and thus the requisite warmth is secured to keep them alive when the mercury sinks below zero. In this contraction of bees (at certain times) many of them are left singly, or in little clusters of from five to fifty, which do not recede with the main cluster, and thus are chilled where they are; and if the weather becomes cold enough they may be frozen, thus losing to the cluster that number of bees.

The reason formerly given for this was that, owing to the movable frames, no cross-sticks were used, as was the case with box hives, and hence the bees left no holes in the center of the combs as they did around the cross-sticks, thus compelling the bees to pass over and around combs of cold honey to keep pace with the receding cluster, instead of passing through the center of the combs to the next range, which was more nearly filled with bees. In thus passing around, many became stiffened and were caught by the cold, which might have been saved if the holes had been provided in the center of the combs for them to pass through. To this end the Langstroth frame and others were provided with a shaving, bent to form a circle an inch in diameter, which was suspended from the top-bar by means of a little strip of tin, supposing that this would effectually secure a passageway for the bees. However, but a short time elapsed before it became apparent that, during a good yield of honey, this shaving would be filled with comb and honey, and hence the passageway was cut off.

Next, the practice of cutting holes through the combs, each fall, by various means, was resorted to, only to be filled up the following summer, when, as winter approached, the process had to be repeated. After trying all of these plans it became apparent to me that the reason assigned as the cause of the death of the bees was not the real trouble, for bees would stay and die within half an inch of these holes, when it would appear they could have passed through these passages just as well as not. I also discovered that, when the weather was cloudy, cool, and rainy for several weeks before it became severely cold, this loss was apparently much greater than when a clear warm day occurred immediately before a severe cold spell. By the number of bees that were found on boards and such places, dull and stupid after such a fine day, I concluded that these were the same bees that would have died by not following the cluster, had not a warm day occurred for them to leave the hive to die; hence, I say that the loss was apparently greater when no such day occurred, for many more bees were seen outside the cluster dead, as they had no chance to go out of the hive to die. From years of experience in this matter, I see no reason for changing the conclusion thus formed.

After the bees once get thoroughly clustered, I do not see this loss occurring to any such extent after a warm spell, and but little after a mild fall as the past has been. After being fully settled for winter, and this loss of old bees has passed away, a colony will lose but few bees for six weeks or two months, and will remain quiet. If at this time a warm day occurs so they can fly freely they again cluster back quietly and remain so about the same length of time, when they again desire to fly; and if such a chance occurs all will go well, and the bees will winter well. Thus we have a colony in a normal condition, and all the cold ever obtained in any portion of the world where bees can be kept with profit (occurring during this period between their flights) will not freeze or materially injure them if they have plenty of good stores within easy access.

IN Fred's brief glimpse of his surroundings he looked anxiously for Dr. Hayden, but he was not visible. Immediately upon being blindfolded he was taken between two stalwart Indians and started toward the fire. Fred began to have some doubts about the doctor's sincerity, and for a moment thought he was to be burned and tortured in true Indian style. He remembered, however, that he had told the doctor that he felt equal to any emergency, and remembered the doctor's cordial indorsement of it, and he took courage. Instead of being led into the flames he was led past them, and soon knew from the confined air and echoing sounds that they were in a cave or subterranean passage.

The Indians commenced a low chant, and at the same moment Fred caught a low murmur, evidently from a distance. At first it sounded like the rustling of dead leaves in the wind. As they marched it grew louder until it sounded now overhead, now at one side, and then the other side; and Fred, forgetting himself, shouted, "That's a swarm of bees," and assayed to pull the bandage from his eyes; but strong hands held him. His senses were all alert now, and, feeling that no injury had come to him thus far, he quietly submitted to the ceremony, and thought that, if he was in a place where bees swarmed in the night, he could indeed endure any thing to be introduced into such a place.

The march continued, and soon the swarming sounds were left behind, and became fainter, and finally died out altogether. While his thoughts were dwelling upon the reality of the swarming sound he sensed the approach to open air again; but before he could fairly realize that fact, he was suddenly backed against an obstruction that sent his feet into the air, and an instant after it seemed that he was falling head first into space. But, no! there was something under him. He was sliding swiftly down a smooth trough-like surface; and before he could realize much, his position had changed; his head was up now; next he was standing on his feet.

"Hah, hah! by golly I bet you's scart. I bet you nebber rode dat way befo', and nebber want to ride dat way agin. Ain't dat so?" said a voice, as the owner of it aided Fred to a standing position, and jerked the bandage from his eyes.

"Wh—where is Dr. Hayden?" said Fred, in a sharp tone, as he regained his breath and his senses, and saw before him a happy negro.

"Dr. Hayden? Dr. Hayden? don't know de man; 'spect you must hab taken de wrong road—ha, ha, ha! But I 'spect you want to see medical man Neo-a-ho-a—medical man am all right; want to see de gemman?"

"Yes, I do," exclaimed Fred. "I shall call him to account for my treatment for the past few hours."

"Ha, ha, ha! well, now, dat's a good joke—call de medical man to 'count! Ha, ha! call him to 'count when he's all 'count and you's no 'count; but, see here, my honey; befo' we argufy any further we want to start dis business right. 'Low me to introduce myself. My name is Samuel Johnsing. I'm called Sam for short."

Fred looked at the negro before him, and saw a young fellow who was thoroughly permeated with happiness. It shone out of every feature.

"Well, you are a happy fellow," was Fred's involuntary exclamation.

"For gracious, of course I is; what ye spose I's here for, any way? and, Mr.—Mr.—my name is Samuel Johnsing, Sam for short."

"Excuse me, Mr. Johnson; my name is Fred Anderson;" and they shook hands.

"Fred for short, I 'spect," said Sam.

"You have it," replied Fred; "but I want to see the doctor."

"Now, Mr. Fred," said Sam, familiarly, "de medical man am in his cabin, and don't 'low to be disturbed till mornin'. I 'spect you's tired too. I know from 'sperience dis inishatin' into de happy valley am very 'zaustin'. Oh! no, no; you don't need de medical man. You need rest. Come dis way an' I'll show you de camp dat'll be your home;" and Sam led the way, humming a lively air.

"I declare, Sam, you are happy, and I begin to feel happy myself. Does this valley make everybody so happy?" said Fred.

"I d'know how it'll 'gree with you; but I's always happy; 'spect I's built dat way. Don't cost no mo' to be happy dan to be sad; no mo' to be sweet dan to be sour; and don't cost so much to smile as to cry. De good book say, 'joy cometh in de mornin',' an' I's one ob dat

kind what wants to make it mornin' all de time."

"That is a good way to live, Sam; and if everybody would only strive to live that way, what a sweet happy world this would be!"

"Dat am 'zactly so; but he'h we are, Mister Fred; he'as de cottage."

"Cottage! why, Sam, that s nothing but a clump of bushes."

"Wy, jes see he'h, Mr. Fred; it's a little dark yet, an' you don't seem to 'preciate de situashun. Step right aroun' he'h to de do'. Now take off de hat an' walk in. Dar, now, who wants any thing better'n dat?"

"Well, this is a novel affair," said Fred, as he examined his cabin. It was a natural growth. A circle about fifteen feet in diameter had been planted to cypress-trees, the tops all inclined inward. When the trees had all grown to the height of fifteen feet the tops and sides became solidly interwoven; then the clipping-shears had been used to give the exterior and interior a hedge finish, and to cut an opening for a door.

"Plenty of fresh air in this thing," said Fred, as he saw the glimmer of the moon through the foliage.

"Fo' gracious, dat ain't fresh air, dat's climate—pure California climate; you'll jes feel like a cherub he'h."

"And here is my cot and other traps," said Fred, "and I'd like to know how they got in here so quickly."

"Oh! I 'spect de boys sent 'em down de elevator."

"There's an elevator, then. Well, now, why wasn't I sent down the elevator?"

"Ha, ha! dat wouldn't a been inishatin'. You'd a' forgot all about comin' in; but now your comin' in is pressed upon your mind delibly, and now you'll be comin' in dat way of your own 'cord."

"Not if I know myself," said Fred. "Do you think I want to try falling in here head first again? Not I."

"Wy! we do it jes dat way w'en we're in a hurry to get down."

"But why don't you slide in feet first instead of head first?"

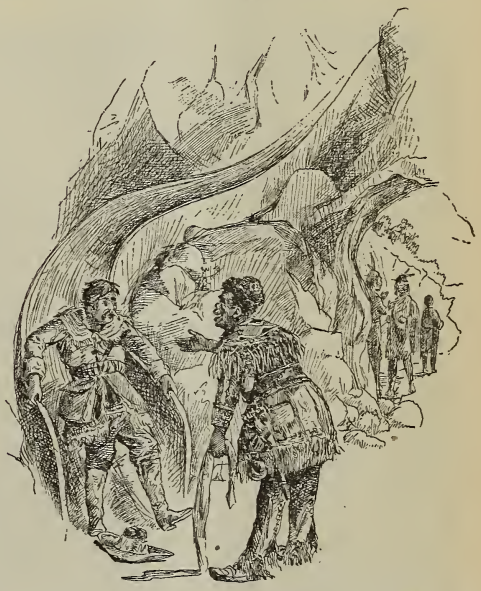
"Wy, dat's 'cause you don't understand de chute. Yer 'sperience with it shows you dat it curves up at de bottom. 'Spose now you start in feet fust, you'd be standin' on yer head at de bottom. Dat would be 'stremely uncomf'table. Don't you see de utmost importance ob startin' in right at de top so's to come out on yer feet at de bottom? Oh! you'll get used to it, an' like de 'zileratin' fun. But he'hs yer cot an' things: jes make y'rself at home. Good-night."

"But, wait, Sam, I want to ask you just one question. What was that noise I heard when coming in here, that sounded like a swarm of bees?"

"Oh! dat swarmin' noise? Wy, Mister Fred, dat's one ob de mysteries ob dis occasion. Don't ax too many questions;" and happy Sam left Fred to himself.

When Fred found himself alone, and all excitement withdrawn, he would have fallen upon his cot with exhaustion had he not immediately done so voluntarily. Tired body and mind must be restored, and he fell into a sound slumber from which he did not arouse until a late hour in the forenoon. When he awoke he found Dr. Hayden sitting in a camp-chair just outside of his bowery-house. At first he felt strong resentment toward the doctor; then remembering that it was his own voluntary action that had placed him in his late positions he felt that he was under an inevitable fate; and he exclaimed, as he arose:

"Charity suffereth long, and is kind; beareth



"HAH, HAH! I BET YOU NEBBER RODE DAT WAY BEFO'!"

all things, believeth all things, hopeth all things, endureth all things."

The doctor looked up from the book he was reading, and, with a pleased expression, said:

"That is good doctrine, Fred. If in all the trials and troubles of life people would look upon them with Paul's philosophy there would be more happiness and a better understanding of the ends and aims of our existence. But now, Fred, as your culinary arrangements are not all in shape, come to my cabin and have a lunch, and I will then show you through our happy valley."

"Yes," said Fred, "I have had some experience with one of its happy occupants."

"Sam is a happy fellow," replied the doctor. "I picked him up in a most unhappy condition in San Francisco, three years ago; but he has developed wonderfully since he came here. He

is as faithful in his work, and as unfailing, as the rays of the sun."

As Fred walked down the successive terraces with the doctor, his eyes took in all they could of the surroundings. The forenoon sun lighted up the obsidian cliffs, sending down scintillating reflections of various prismatic hues. Successive terraces arose against the northern wall of the valley, while upon the south side there was a cliff a hundred feet in height. An occasional live-oak of natural growth and massive proportions lent picturesqueness to the view, and the later-planted eucalyptus, fruit-trees, and vines, were placed with a view to artistic effect. Every unsightly object, and even some of the highest-pointed cliffs, were covered with various flowering vines. Fred was a great lover of the beautiful in nature, and he exclaimed, "Doctor, you have made this a veritable fairy-land."

"I have tried to make it such, and I feel that it is a beautiful valley; and when you consider that those trees and vines, foreign to the valley, have been planted only eight years, you must know that this is the most fertile corner in all California. But here we are at my cabin, and your lunch will soon be ready."

Fred found the doctor's cabin about as primitive as his own; and smiling Samuel Johnson, Sam for short, was the presiding genius and cook. A simple breakfast of oatmeal mush, honey, milk, and fruit, was served. As the three sat down together to partake of it, Fred said, "Doctor, this beautiful valley has excited my Yankee curiosity, and I hope you will excuse me if I ask what may seem impertinent questions."

"There is nothing to hide from you, Fred, now that you are inside the valley."

"Well, then, doctor, do I understand that you are the only white man living in this valley?"

"The only one excepting yourself, Fred."

"An' Sam Johnsing," said the latter, with an appropriate grin.

"That's so, Sam. We three," said the doctor, emphasizing the words, "are the only persons, except Indians, that live here or even have knowledge of this valley."

THE WONDERFUL VALLEY, CRYSTAL MOUNTAIN.

"That is a mystery," said Fred. "I should expect to see some enterprising prospector looking looking down from the cliffs here at almost any time."

The doctor and Sam both smiled, and the former said, "Well, seeing is the most convincing argument, and by and by we will show you why it is that people do not look over the cliff."

"But," said Fred, wonderingly, "I know there is a passage into this valley, even if I did come through it blindfolded; and even a narrow passage would never have escaped the prying eyes of the gold-hunters unless there is a perpetual guard over it."

"That is it exactly," said the doctor. "There

is a perpetual guard in the shape of a huge stone in front of the entrance. It is so nicely balanced that two persons, knowing the secret, can open and close the entrance with ease."

"Well, well! This *is* a mystery, sure. But, doctor," continued Fred, with a quizzical expression around the eyes, "I heard something that sounded like a swarm of bees when coming through that passage."

"Oh, yes!" said the doctor, musingly. "I can readily see how a bee-man might mistake the peculiar noise. You were then in the rattlesnake chamber. No man can pass through that chamber and live unless guided by our Indian friends."

"Rattlesnakes, do you mean to say? said Fred, rising abruptly. "Why, there must have been thousands of them."

"There, there, Fred; there is no occasion to be excited now. You are perfectly safe here. But let us change the subject. You have doubtless heard of several paradises for bee-keepers. Let me now show you mine."

DR. MILLER writes that he tried the honey-jumble recipe (see page 23) without using any molasses, but he says it did not work as well.

AT last we have a bee-keeper and honey-buyer who is prepared to make analyses of doubtful samples of honey. I refer to W. A. Selser, 10 Vine St., Philadelphia. See his ad., p. 40.

HOME again. I am glad to tell you all that I am now once more at my post, ready to serve you as best I can, with renewed strength and energy. I reached home just as the last form was ready for the press. A. I. R.

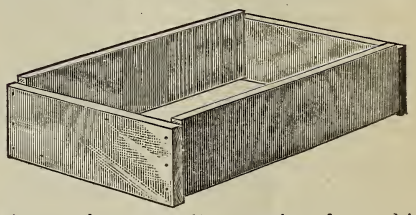
I NOW have in hand copy for the new honey-leaflet, by Dr. C. C. Miller. I knew that the doctor could do the work well, but he has considerably exceeded my expectations.

We shall have these leaflets ready shortly after the next issue, and will put them at such a price as will enable bee-keepers to give them away to their customers.

It would be a capital idea for bee-keepers to furnish their grocers these leaflets to hand out to all their customers. If they do not make a demand for honey, I do not know what will. Price and further particulars will be announced later.

Later.—Just as we go to press a package of honey-caramels from Dr. Miller has come to hand. They are as fine as any I ever tasted; and by the way some of the rest in the office are "working their jaws" you would think they were of the same opinion. They are made of honey, and have the distinct flavor of honey. The receipt is one of the doctor's own getting up, and will be given in the honey-leaflet above referred to

A SUBSCRIBER wishes to know whether planer shavings are as good as chaff. We are using the former right along now, and we do not see but they winter the bees just as well as chaff. The shavings have the advantage that they dry out quicker; and if enough are used they are just as good for warmth. This same subscriber also asks what kind of hive-stand we use. All our hives, both summer and winter, are set upon stands like that shown in the accompanying engraving. It raises the hive just



high enough to make it convenient for working, keeps the hives out of the wet, and the bottom-boards from rotting. These stands are made of the cheapest cull lumber, and at the present rate they will last ten or fifteen years.

"FISHING FOR SUCKERS."

THE following burlesque appears in an advertisement of one of the prominent commission houses of Cleveland. As it illustrates so nicely the growth of some of these mushroom "snide" commission houses, I reproduce it right here:

Mr. John Dumbower, Dear Sir:—In reply to your letter, would advise you to go into the commission business. There is no other business in which fishing for suckers is so remunerative. There are a great many of them, and, as has been said, "a sucker is born every day."

One hundred dollars and plenty of confidence in yourself will start you nicely. You could rent a store and buy office fixtures on the installment plan. Then the first thing to do is to send out from 500 to 1000 circulars. On your card and circulars say that you "handle all kinds of produce on commission; special attention paid to the sale of butter, eggs, and poultry. Liberal advances made on consignments." (This latter in large letters.)

By sending out lots of circulars with big quotations you will get shipments at once. You will have plenty of customers as soon as you have goods to sell. Many of the grocers, market men, and hucksters like new openings. They will at once patronize you, pay outside prices, and cash. They will work you for credit later. When goods are all sold, send shipper a postal card, saying: Goods sold at ——; market active; ship more."

One commission house in Chicago started out on almost exactly the policy outlined; but instead of paying cash, and getting in a financial muddle, their chief man "skipped the country" with the hard-earned funds of bee-keepers. There are numerous other commission houses that are organized and operating upon almost exactly these lines. Their final collapse is only a question of a short time; but in the meantime bee-keepers need to look sharp, to be sure they are not one of the victims.

DOOLITTLE IN FAVOR OF TALL SECTIONS, AND WHY.

DOOLITTLE, in his article in last issue, gives pretty strong testimony in favor of tall sections. You will note that he says that his own preference is for such, and that his reasons for preferring them are that "more in number can be set over a given space;" are "of symmetrical proportions," "pleasing to the eye, and do not give a scrimped appearance or pattern," and that "they bring two or three cents more per pound in the market." Mr. Doolittle was speaking in favor of sections 3½ x 5⅜ x 1⅝. This is so near the 4 x 5 7-to-foot that is more commonly used that I have no doubt his argument would apply with equal force to them. We as manufacturers dislike very much to help push along an odd-sized section; but *if* a certain shape brings more money to the producer, GLEANINGS can not and must not keep its mouth shut. Our journal is first and foremost the advocate of the honey-producer, and, secondarily, of the supply-dealer.

All through York State the tall section has been used to a more or less extent; and just at this time, when bee-keepers are preparing to order their stock, they would like to hear of all the good and bad things about the tall sections. Mr. Doolittle has spoken a word for them, and Mr. Salisbury, of the same State, has given a note of warning. Let's hear from more.

DARK CLOUDS AND THE SILVER LINING AT THE REVIEW OFFICE.

BRO. HUTCHINSON, of the *Review*, has been passing through deep waters. First it was the long and serious illness of his daughter Ivy, resulting in the breaking-down of her nervous system, and now she has been obliged to leave home for special treatment for mental disorder. Mrs. H., on account of the long strain and weary hours of watching, is completely broken down in health, and now she has had to go away for treatment. Our friend not only misses the wise counsels and assistance of his helpmeet, but he has to labor alone under the strain that his loved ones are away and sick—being cared for, it is true, by trained experts, but away from him.

I am sure the readers of GLEANINGS, especially those who take the *Review*, will sympathize most sincerely with Editor Hutchinson; but in spite of all the trouble and disadvantages under which he is working, it is a pleasure to note that he seems to see a silver lining to it all, and this is what he says, after asking his readers to extend a little leniency:

> I am doing the best that I can under the circumstances, and feel sure that these troubles can not always last; that I shall yet be able, as of old, to make the *Review* one of the best journals that there is for the practical honey-producer. It is my life-work, and I love it.

It is true the *Review* has been a little late; but its standard of excellence has been remarkably well kept under up under the circumstances. It is the prayer of the editors of GLEANINGS that all things may come out well in the end.

THE BICYCLE IN THE REVIEW FAMILY.

BRO. HUTCHINSON is now in possession of a steed—not a real live one, but a real high-grade one. He says he felt many times as if he wanted a bicycle, but—well, he could not afford it. When his wife was sick he took long walks with her for her benefit. Then the thought occurred to him, "Why not a wheel?" He secured one, and he and Mrs. H. and the girls learned to ride it, although they met some difficulties at the start. When he bought a typewriter he wondered if he could afford it. After using it a while he did not see how he could afford *not* to have it. The same was true with the bicycle. He says:

> And then if the brain lags, and the work moves slowly, take a spin of twenty minutes over the smooth walks of the outskirts of the city, and come back with the pulses bounding and the "blues" left scattered by the wayside. My brother editor, Ernest Root, will know exactly how I feel, and so, I hope, do many others of my readers. I am really hopeful that, by another summer, wife and I may be chasing each other over hill and dale—on wheels.

Yes, indeed, friend H., I know what it is to come back with the "pulses bounding," with a feeling of invigoration and a clear head for work. "Blues"—well, I do not know that I ever had them — but I have had something worse. Thanks to the beef diet and wheel-riding, I have a clear head, clear countenance, good health, and weigh the most I ever did in my life.

Mr. Hutchinson adds another paragraph, which is right along in line with what I have been preaching, off and on, for some years. I wonder that more bee-keepers do not avail themselves of the use of the bicycle for out-apiary use. Even if they have a horse, there are many times when they could make a trip so much quicker on the steed of steel—one that never requires feeding, never gets to balking, and is *always* ready. Mr. Hutchinson says:

> If I were running out-apiaries, I think that I should see to it that everything needed to work with was taken to each apiary, and then I should use a wheel as a means of conveying myself from one yard to another.

THE UNITED STATES BEE-KEEPERS' UNION.

MR. HUTCHINSON has not said very much on this subject in his own journal; but in the December number he has an editorial which I copy entire.

> I fear that the great majority of bee-keepers do not really understand what was done at the last meeting of the North American Bee-keepers' Association. It changed its name to the one that stands at the head of this article, and adopted a new constitution that will enable it to take on new and important functions. This constitution has been published in most of the bee-journals. It has not appeared in the *Review*, but I think now that it *ought* to have been published there; however, I presume that most of my readers have seen it. If they have not, GLEANINGS or *American Bee Journal* will gladly mail any one a copy containing it. In January the members of the National Bee-keepers' Union will vote whether they and their money shall be merged into this new United States Union. If this is *not* done, if amalgamation does *not* take place, then

the new, or United States Union, will go on, regardless of the old Union, and do the work that is necessary to do—the prosecution of honey-adulterators for one thing, and the old National Union can sit still and do nothing except to guard and brag of the $700 that it has amassed since it stopped doing any thing. I don't wish to be disrespectful; but, honestly, the work for which the National Union was called into existence has been finished—*practically* finished—and other work of a hundred-fold more importance is looming up and growing greater and greater as the months and years go by. A good lot of money in the treasury is a good thing; but *good accomplished* with this is better than the money itself. In the "Extracted Department" of this issue of the *Review* you will find that I have written more fully upon this subject. I hope that every member of the old National Union will consider well before he votes. We need just one good, strong, wide-awake, enthusiastic national association of bee-keepers, and that is enough. Only get the thing started right and there is no question but that it will "go." Already money is being sent to the Secretary of the new United States Union, Dr. A. B. Mason, Sta. B, Toledo, Ohio, to join the Union "that is going to prosecute dishonest commission men." Just as soon as it is really evident that we are going to have a Union that will *do something*, there will be no lack of members. Let us have amalgamation, then will follow plenty of members, and there will be plenty of money; and then, with the right men at the helm—men with "go," determination, and enthusiasm—much good will come to bee-keepers as the result. The times are ripe for this move—let us move.

I indorse most heartily the sentiment of this. It is indeed true that the work which the National Union was called into existence to perform is practically finished, yet there is other work a hundred-fold more important. A lot of money in the treasury is a good thing; but a lot wisely expended, and an empty treasury, in prosecution of dishonest commission men and honey-adulterators, would be a far better condition. Mr. Hutchinson is right.

IMPROVEMENTS ON HIVES; IS THE DOVETAILED HIVE PERFECT? THE HIVE "MONOPOLY."

In the *American Bee Journal*, p. 834, a writer under the *nom de plume* of "Inventor," at the beginning of an article uses these words: "In the bee-papers I find the idea prevalent that the present Langstroth hive is perfect, and that no one should undertake to improve hives further than to accept the Dovetailed hive as a standard. . . An inventor can be just as honest as Mr. Langstroth, and I do not believe the time has come when all should say, 'It is perfect—let the monopoly go on.'" And, again, he says, referring to improvements on hives, "I think that manufacturers make a mistake in crying down improvements that they may control the sale of certain fixtures."

From certain other references and allusions, outside of what is above given, it would look as if Inventor had our firm particularly in mind, although it is possible he meant all.

Starting with the first quotation, most emphatically I do *not* believe the "idea is prevalent" that the Langstroth hive is perfect, and that "no one should undertake to improve bee-hives further than to accept the Dovetailed." I am quite conversant with what appears in our own periodical, and I believe I am tolerably well acquainted with the matter in other bee-papers As for ourselves, we have never believed the Langstroth nor the Dovetailed hive was perfect. We have been looking so much toward improvements that many of our friends have asked us to "let up," because their new fixtures did not fit the old. But it is nevertheless the fact, that, when one manufacturer makes an improvement that meets with popular favor, the others follow along in the same line, and very often—yes, *generally*—cut prices. What foundation is there, then, for the sentence, "It is perfect—let the monopoly go on?" The fact of the matter is, there are hardly any two of the manufacturers that sell exactly at the same prices on hives. A comparison of the various catalogs will bear out the statement.

We have for some time had a department in this journal, called Trade Notes, in which we have illustrated and described various hives of merit. For instance, I would call attention to the Danzenbaker hive, the Heddon, and the Aikin-McKnight hive, all of which possess peculiar and valuable features, none of which are based on Langstroth dimensions. Moreover, The A. I. Root Co. is about to give in its catalog the option of the Dovetailed or Danzenbaker hive. The latter is as much a departure from Langstroth principles as any thing can well be. There is nothing standard about it, and yet it is a hive that gives much promise, and one too that certainly does contain some desirable features.

Again, I would call attention to the fact that GLEANINGS has pushed forward the merits of the tall section, and that right in the face of the fact that the 4¼ square ones have been used almost exclusively. If we as manufacturers were "crying down improvements," it is hardly likely that we would push forward an odd-sized section and an odd-sized frame.

From my point of view, Inventor's observations seem to be all wrong. If he had said the very opposite of what is set forth in the quotations above given, he would, in my humble judgment, have come nearer the truth. I venture to state that, if he would go through some of the large supply-manufacturing establishments of the country, he would have reason to change his mind. We have in our establishment an experimental room, and an "inventor" who is at work all the time. In the near future I hope I shall have the pleasure of showing that *our* "inventor" has not been idle by any means. The new thing will not be an improvement, but an *innovation*—something that, in my humble opinion, will be classed alongside o the extractor, comb foundation, movable frames, and the bee-smoker. The world does move, even in the apicultural line, friend Inventor; and if you will call upon us some time I'll try to convince you that there is progress, even at The A. I. Root Co.'s works.

I SEE by the *American Bee Journal* that the secretary of the U. S. B. K. U., Mr. O. L. Hershеiser, says he will try in every way to make the meeting at Buffalo a grand success. Mr. H. is a hustler, and a man who is not afraid to work. It goes almost without saying, that the Buffalo meeting is going to be a good one.

THE editor of the *American Bee Journal* has a happy way of getting off puns. Here is a sample:

Mr. R. C. Aikin, who contributes a valuable article to this number of the *Bee Journal*, is now writing a series of articles for GLEANINGS under the heading of "Ridgepole Musings." The rather toplofty first half of the name was suggested, we believe, from the fact that for several years Mr. Aikin kept bees in Colorado, several thousand feet above sea-level—on the very "Ridgepole" of the continent; and he is now in Iowa, where he is indulging in the "Musings" part of the heading. Judging from the first installment, the "Polings" of this new "Ridge Muse" will cause an "Aikin" (achin') for more of the same kind, on the part of those who "R. C.-ing" what he has to say.

TWELFTH ANNUAL REPORT OF THE NATIONAL BEE-KEEPERS' UNION; MR. NEWMAN'S CRITICISMS; AMALGAMATION FOR THE FUTURE.

THE above report, for 1896, is at hand. The Manager states that the past year has been one of the busiest since the Union was formed. After re-counting the usual defense cases, Mr. Newman has at last, it seems, done something in the way of taking up the difficulties between bee-keepers and commission houses. These last issues are rather an innovation in the Union. Although the constitution was modified several years ago, so that it could take in such cases, yet very little has been done along these lines till the year just closed; and then it would seem as if this tardy action were owing to the hints offered now and then during the year, and the criticisms of late to the effect that there are other issues tenfold more important. Some of the cases of the commission houses taken up have already appeared in the *American Bee Journal* and GLEANINGS; but beyond the mention of using the name of the Union, and publishing the facts, he seems to have done little more than the journals.

The subject of amalgamation is next taken up. The constitution of the U. S. B. K. U. adopted at Lincoln is given, and then the criticisms of the General Manager, as offered some little time ago, and published in the journals. Mr. Newman then pays his respects to the editors of the *American Bee Journal* and GLEANINGS, characterizing their criticisms of his policy as a "storm of abuse," "unpleasant personalities," and then adding that they threatened to defeat him at the election if he were a candidate for re-election as General Manager. Mr. Newman has misrepresented (I try to think unintentionally) by giving only partial quotations or telling only part of the truth and then putting his own construction on them. It was GLEANINGS that stated it would work by all "fair and honorable means" to defeat him if he were a candidate, but added the proviso, which Mr. Newman omits, that *if* it was his policy "to prevent and possibly postpone amalgamation indefinitely" *then* it would work to defeat him, etc.

How Mr. Newman can construe what was said in GLEANINGS as a "storm of abuse" and "unpleasant personalities," I can not see. It is true, I criticised his policy of confining his attention to the defense issue mainly, but criticisms of *policies* are not necessarily "storms of abuse" or "personalities."

Mr. Newman has done what, I am sure, will be severely criticised — viz., setting forth only *his* side of this amalgamation matter. He has not only put in his own criticisms, but those of a few others, *without their names*, giving *only one side*. A General Manager, or *any* presiding officer, should act impartially by giving both sides fairly. Certainly the opposition should have a chance to state its own arguments *in its own language*. As it is, he has attributed to us motives we did not have, and sentiments that we never uttered, by putting his own construction on what we did say. The journals, on the other hand, have freely given all that he has sent in for publication in the way of a reply or defense. Doing as he has, giving only one side, and that his own, in the report at hand, I shall be very greatly surprised if the proposed scheme for amalgamation carries; and, moreover, one of the men whom he has recommended to count the votes, has, in the *Progressive Bee-keeper*, criticised most severely the *American Bee Journal*. Such a person can hardly be impartial. I have nothing against Mr. W. D. French. Outside of his very apparent prejudice he would be as good as any man to count the votes and certify the results to the General Manager; but it certainly would have looked very much better, in view of the position that Mr. French will occupy, if he had kept still.

If amalgamation should be defeated, as now seems altogether probable, GLEANINGS will submit. The U. S. B. K. U. will go on, however; and if amalgamation can not be effected this year, strong efforts will be made to have it done a year hence; for bee-keepers can not afford to support two societies; and if Mr. Newman shall continue to take up the question of dishonest practices on the part of commission houses and the question of adulteration, GLEANINGS will be quite willing — in fact, will be glad — to support and work for him as Manager of any Union that may be formed in the future. Mr. Newman has shown splendid ability in *one direction* — viz., defense; and now if he will only turn that ability in *other* directions, GLEANINGS will be very glad to see him stand as General Manager.

IN THE DESERT.

Dec. 28.—Here I am, away out on the desert, camping out, and writing these notes beside the camp-fire. We are at New River, Maricopa Co., 45 miles from Phœnix. We left the last irrigating-canal at 11 o'clock; and a board put up warned travelers, "No more water for forty miles." I rode on my wheel 14 miles before 8 o'clock, so as to be on hand at the start. I got breakfast on the way; but before starting I had some more breakfast. Let me explain, I wanted to take the long trip on my wheel alone; but everybody protested, and said I must have a team to carry provisions, bedding, etc., as there was no lodging-place for many miles, and, furthermore, storms might overtake me, and I might get lost. Finally a couple of bee-men, whom I shall always remember, rigged up a team, with provisions, bedding, etc., and announced they were ready to follow wherever I wanted to go. Their names are Thomas K. Elvey and J. F. Carey, both of Phœnix (the latter gentleman being president of the Maricopa Bee-keepers' Association). Both are very busy men; but when they found I was bound to go they declared I should go in good shape, providing I could stand "roughing it." This is a sample of the hospitality of this region. I ride my wheel as long as I choose, then stick it on top of the bedding, etc., and ride on the light spring wagon and listen to the stories of my companions and explanations of the strange things we come across every hour.

Oh how I have enjoyed this trip through the arid desert and up the canyons, and over the mountains! I am now writing by a candle stuck in a bag of barley. My table is a roll of bedding, and my seat is the soft desert sand covered with a piece of canvas. The camp-fire is at my right hand. Our supper consisted of potatoes roasted in the ashes, toast made on a forked stick; meat; fig jam, made from fruit grown by Bro. Elvey, etc. Just think of it—sitting on the ground out of doors, writing by a candle, between Christmas and New-year's day!

This afternoon we passed a flock of 2400 sheep, managed by one man and a shepherd dog. I took off my cap to the man, and felt like doing the same to a dog that had the intelligence and skill to guide and direct this great drove in any direction desired.

We are near a running stream of water, after our long drive, and it was my privilege to build the fire and help gather wood for the night. I never felt so well in my life, and I have been out of doors almost constantly for the last three weeks. Now, while I have every thing so comfortable about me, and two old veterans in the business near me, I think I will tell you something about

THE SALT-RIVER VALLEY AND IRRIGATION.

This valley is about 50 miles long by about 30 miles wide. The river runs through the valley, and, strange to tell, there are thousands of acres as flat and level as a floor, only that the surface is on a regular slant toward the south and west, at an average of about 10 feet to the mile. There are, perhaps, 250,000 acres capable of irrigation. All along the river are dams that take water into canals at intervals. These canals are at first considerable-sized rivers; but smaller ones lead off as needed, until all the water of the river is spread equally and equitably over the land. Now, please bear in mind that the whole valley is divided by good roadways into square sections one mile on each side; and along each road, and on both sides of the road, is one or sometimes more irrigating-ditches. I say one or more, for there are often three ditches, one on one side of the road. Sometimes the water is hustling in one ditch in a certain way, and in the *opposite direction* in the ditch right alongside. This is managed by raising the sides of the ditch at one end, and cutting down at the other. Now, remember the water in ditches side by side is often at different elevations. One ditch often crosses another as much as three feet above the lower one. A wooden box carries the water across. Of course, bridges or plank sluiceways must cover the ditches at all road-crossings. Go where you may, the sound of rushing water and babbling brooks is always in your ears. This sound, with the sight of the running waters, is to me most inspiring. But, wait a bit! All over this valley cottonwood-trees are growing along the ditches. In a little time they shade the road, and in the older settlements the branches meet overhead. Even in *winter* time the shade of these trees every afternoon is very grateful. The roots hold the banks of the canals from being washed out. The cottonwood holds its leaves all winter, and grows with wonderful rapidity. It is so hardy that green posts driven into the ground during the winter will grow almost certainly, with plenty of water. Now, all the fences are wire, and the wire is stapled to these cottonwood posts or trees*.

The great staple crop of this valley is alfalfa. I have told you of the beauty of the fields. The greater part of the alfalfa is fed to cattle, and this is the place of all the world for patients on the beef diet. In Cleveland, O., I paid 50 cents for a plate of ground beef. At the "Grotto" restaurant, in Phœnix, for *10 cents* I got more than I ever eat; or a nice tender steak, more than I could eat, for 10 cents, potatoes included; butter, milk, and cheese, about the same as in Ohio. Chickens, turkeys, geese, hogs, and, in fact, all kinds of stock grow fat on green alfalfa. At the restaurant I got a nice dinner of turkey for 15 cents, potatoes included.

Large quantities of hay are made here and sold at $4.00 or $5.00 a ton. At the "corral" (livery stable) they will take your horse, and feed and care for him for 25 cents a day, and hitch up when you want him again. If you do not leave him a whole day, it is only 15 cents. Please remember, the horse needs *no grain* if he has enough alfalfa hay. Still further: If the man who owns the horse has his own blanket with him he can make his bed on some hay in a vacant stall, and *not a cent* for lodging.

One morning I was to meet some bee-friends at the corral at daylight, and I found quite a number of well-dressed men getting out of their blankets, and washing at the pump where they water the horses. Soap is furnished to all, and *no charge*. When I spoke of sleeping outdoors, one of the bee-friends showed me his bed under the shed adjoining his bee-house, where he sleeps right out in the open air *every day in the year*. Think of sleeping in a bedroom with *not a window open!* No wonder the people of this valley are *healthy*.

Brother Elvey tells me the coyotes will be howling around us before morning. Our candle is still burning right in the open air, but it is almost bedtime. We have just been listen-

* Besides the music of the "babbling brooks" every morning, the air is vocal with the songs of the meadow-larks, blackbirds, and the cooing of the mourning-doves. By the way, there are three kinds of doves.

ing to a story of killing 55 ducks at one rising—at three shots. The next story, by friend Carey, was about killing three deer out of a bunch of four before they got away.

Good-night, dear readers of GLEANINGS.

Dec. 29 —Last night I went to sleep gazing at the brilliant starry vault above. I believe it is generally agreed that the heavens are more brilliant here in the South, especially on the prairies, than in the North. Well, just before midnight friend Carey announced that we were in for it — raindrops were falling. Our supper-table was left standing, so as to be handy for breakfast; but I tell you there was some hurried packing of the dishes, bedding, etc., into the wagon. Soon the stars were gone, and it was too dark to attempt to regain the road. Our fuel was about out, and no more to be had — no lantern — we might get into the river, overturn the wagon, or do worse. When things began to look desperate Bro. Elvey remembered, evidently, the old Bible story of the torches inside the pitchers — Gideon's army. He got the end of the candle left after I got through writing, lighted it, and held it inside the water-pail turned on its side so as to keep off the gusts of wind, and we regained the wagon-road, and in this manner reached a barn which *happened* to be near — the only one, in fact, in many miles; and, didn't we rejoice in the shelter!

THE BEE-KEEPERS OF SALT-RIVER VALLEY.

Between forty and fifty bee-keepers have produced, during the past season, 31 carloads of honey. Many of the apiaries have over 200 colonies in one location, and some have even 300; and even with this large number, as much as 175 or 200 lbs per colony, right through. The valley is said to be pretty well stocked at the present time, however. Even though the crops of honey are large, freight is so heavy that the net price realized by the bee-keepers is very low. Alfalfa honey sells, retail, at 5 cents; by the 60-lb. can, 4 cents, *can included*. In car lots, after taking out cost of cans, only about 3 cents is realized. A nice article of well-ripened alfalfa honey is nearly if not quite equal to our best eastern white clover.

Dec. 29.—After the rain slacked up I asked what our bill was for the use of the barn, for our bedding and horses, and the reply was *$2 00*. We had our own provisions, and furnished our own feed for the horses. I finally persuaded him to accept $1.00. This place (Gibson's ranch) was the only one where we felt like complaining of the prices. To-day we saw great mountains, with snow-capped peaks, towering above the clouds. While some were illuminated with sunshine, many others were being deluged by thunder-storms, and twice we saw floods of muddy water rushing down across our path. My supper by the camp-fire was quail on toast. These desert quail, under Mr. Elvey's cooking, were delicious. He says he can dress eight quail in sixteen minutes.

Along at intervals we find water, and some of the watering-places are curious and interesting. At Squirrel-hole Springs the water bubbles up in little holes in the solid bed-rock of a dry river-bottom. The largest of these holes will admit a water-bucket.

In going up a long mountain road we saw ahead of us three teams with their huge loads, and four or six horses, stopped by a breakdown. Of course, all three stopped to help repair the wagon belonging to the unfortunate brother. Mr. Elvey soon found one of the crowd was a Mr. W. W. Burford, of Kansas City, a bee-keeper, and a subscriber to GLEANINGS. He walked back with us up the mountain, just to have a little talk. Friend B. has been almost a year exploring Arizona, and has among his collection a real *mummy* that he found in one of the cliff dwellings.

After the severe rain of Monday night I found it impossible to run my wheel over a good deal of the road, on account of the sticky "doby" mud. It would cover the rubber tires like melted beeswax; and when it got on the steel chain there was no more wheeling, and it is a long job to clean it off, I tell you. The trouble is not confined to bicycles, for at some points this doby mud collected on the wagon-wheels until they looked like huge barrels, and two stout horses could hardly pull a light spring wagon. When this load of mud dropped off the wheels of the wagon it was, of course, a big obstruction in the road for the next team that came along. The greater part of the roads, however, are very hard and firm, and there are only a few days all winter when there is mud anywhere. The last night of 1896 we passed at Hance's Ranch. As the family were away for the winter we found only the hired man and a teamster, who had a sick horse. Now, these teamsters, like many of the miners, seem to think the best credentials of good breeding is to bring in cursing and blasphemy about every other word, whether it makes sense or not. The sick horse was cursed, and the weather and every thing else. I tried various subjects of conversation, but the replies were all the same. I finally made up my mind that, even if we were in one sense forcing these people to give us a shelter from the snowstorm without, I should get these two men apart, and, one by one, labor with them in regard to such talk. After supper we sat around the fireplace and began to tell stories; and I prayed most earnestly for grace and wisdom to speak the right word at the right time. My prayer was answered in a very unexpected way. In fact, I almost held my breath in astonishment when story after story was told, without a slang word of any kind. These two men were so changed I could hardly believe my senses. Instead of complaining and sneering at every thing good and holy, they were pleasant, respectful, and gentlemanly. When Mr. Elvey and myself were getting under our blankets that night I said:

"Friend E., can you explain this sudden and wonderful change in these two men during the pleasant evening just past?"

"I suppose I can partly, Mr. Root. I saw how their talk pained you, and I suggested to Bro. Carey that he should talk with them, as he is used to such characters."

Let me explain here, if I haven't before, that my companions are both professing Christians. Mr. Carey is a Quaker, and in the true Quaker spirit he presented the matter so well that these two seemed "clothed and in their right mind," all the rest of the time we were there. New-year's morning the sky was bright and clear as I wished all a "happy new year." Then I added to the teamster:

"My dear friend, can we not, this morning at least, 'praise God, from whom all blessings flow'?"

"Yes, sir! that's my doctrine," he replied; and I inwardly prayed that it might be so, instead of *cursing* God at every breath.

Oh what a "happy New-year's day" I did have! As we reached the mountain pass and prepared to go down Copper Canyon we had a glimpse of the Verde Valley, three miles below, or at least we had a glimpse of the clouds away down below us. How strange it makes one feel to be with the sun far *above* the clouds! Then the canyon all the way down is full of beautiful shrubs and various kinds of evergreens; and pretty soon a spring commences to send down with us a clear and sparkling "babbling brook." This brook is green with most appetizing and

brilliant water-cress almost its length. The road takes first one side of the canyon and then the other; and the grade is so gentle that a wheelman would go up or down almost every part of the route. The Verde (green) Valley is somewhat like that of Salt River, but not as level, and only a little of it is under irrigation, although there is an abundance of water in the Verde River at all times of the year.

Let me explain here that I found we had a subscriber at Camp Verde. Here is what he answered when I wrote him:

Dear Bro. Root:—We shall be delighted to entertain you as long as you can stay with us, and may be able to go with you to some of the points of interest to you. We had thought of sending you a card, but supposed you would go to Flagstaff by rail, and so not come near enough to us. We are Ohio folks, and have lived in Medina. C. B. BELL.

Camp Verde, Ariz., Dec. 24.

What strange things do happen! After we were received and made welcome at friend B.'s pretty home I learned as follows:

Years ago a very pretty girl was threatened with consumption. I was then a patient of Dr. Salisbury, and finally induced the relatives to try the Salisbury treatment. Dr. S. said we had waited too long, he feared, but we would do our best to rescue her. For a time she seemed to be recovering; but she caught cold, and went down very suddenly, leaving two children. Mr. Bell, whom I found away out here in the wilderness, is the older one of these two children. Oh how it did rejoice my heart to find a Christian home away out here in the desert.

CHILD-TRAINING.

CONCLUDED FROM LAST ISSUE.

By Miss Sarah Smith.

By way of contrast let me give you this little incident of another mother, told by her daughter after reaching womanhood. "One day," she says, "I stood watching my mother make strawberry preserves. Beside the stove stood a large milkpan containing squash for pies, with the milk and egg already added. 'Now, Bridget,' said my mother at last, in a satisfied tone, 'it is done; take the kettle off.' This was accomplished, and then, with almost incredible stupidity, the girl actually emptied the strawberries into the squash. My mother turned her head just too late. She was quick and impulsive, but there escaped her lips only a despairing 'O Bridget!' Then as she saw the girl's instantly regretful face, she uttered no angry reproaches, no useless lamentations. No doubt," says the daughter, "when my tired mother, who was not strong, went upstairs to rest, she felt disheartened, and thought that her time, labor, and material had all been wasted; but probably she never did for me a more valuable morning's work than when she gave me that unconscious lesson in sweet self-control."

In my work as a teacher I have come to the conclusion that little children learn most easily when not making a conscious effort to learn. The very effort to attend often takes the mind from the thing to be attended, and leaves it less free to grasp the new thought; hence it is that the unnoticed child, supposed to be wholly engaged with his play, is often absorbing every word you utter, and making conclusions that would astonish you could you look into that active little brain. Do you know that nearly all a child's judgments of persons and things are formed before he is eight years old, and formed for the most part by the conversations he has heard at home and the unconscious influence of those about him? In proof of this, witness the politics of the six-year old—same as his father's, of course. Yes, that daughter's hasty, unwise marriage, that so sadly grieved the loving father and mother, may be traced to influences set in motion before she was old enough to wear long dresses. The contemptuous tone in which she so often heard the unmarried women spoken of; the praise she heard bestowed upon the successful man, regardless of the rights of the case; the choice for her of accomplishments rather than culture; the early-fostered ambitions for style and show, all had something to do with it. You can not begin too soon to help a child form right estimates of character. I know a father who takes special pains to have his ten-year-old daughter meet men of real worth, and who seeks opportunities to commend in her presence the true and honorable, especially when found in the humble walks of life, or where not likely to be appreciated, and to show contempt for the base, unworthy, and pretentious, however well supported by name or position. The events of every town or neighborhood furnish many opportunities to speak your convictions, to utter a warning, or point a danger years before the child is old enough to be made uncomfortable by such remarks or allusions; all of which will help in forming her ideals of life and persons.

And, again, I repeat, high ideals save. Now, I suppose if I should ask for greater freedom for the children in your homes you would smile, thinking that far too many now do just as they please. I do not mean greater liberty or license, but greater freedom to grow naturally, greater freedom in the exercise of their own individual tastes and choices in non-essentials; freedom from the ever constant consciousness of your presence. I am quite sure that children are often harmed and burdened by our attention, begun as soon as born, when, instead of being allowed to remain quietly in a darkened room with only enough attention for their comfort, they are dragged out to be shown to every chance caller, and hugged and kissed and trotted and tossed till no wonder nervous days and sleepless nights follow.

So much is written nowadays about what parents should do for their children that I am afraid some are in danger of overdoing. While the very best training often consists in a judicious letting alone, I do not mean that children are to be left wholly to their own devices, to be allowed to get into mischief, quarrel among themselves, or run wild on the streets. While you are never to drop the reins of family government, you need not hold them in such a manner as to make the child constantly conscious that he is being restrained or driven.

Nervous and fussy mothers weary and irritate their children with their numerous cautions. The child ought not to have the feeling that he is being watched all the time. My sympathies are with the boy who sent the cat back into the house because, as he said, he could not have her hanging around all the time; it was bad enough to have God watching him all the time. "The eyes of the Lord are in every place, beholding the evil and the good," is a grand true thought, but not just the one with which to begin a child's religious instruction. Postpone that till you have taught him that they are *loving* eyes. Furnish the child right environment, and then—hands off!

I remember being at one time in a home where was a little child about two years old who had been kept in very closely all winter. When the bright spring days came she grew eager to get out of doors; but no sooner was this permitted than she started as fast as she

could go for an orchard and a ten-acre lot back of the house. When brought back she would cry, and thus spoil all the pleasure of the morning walk. It was finally agreed that she be allowed the desired freedom while we watched her unobserved. She started as usual for the orchard, trudging on as fast as she could go toward liberty and the vast unknown. Her happiness was complete till she happened to look back from just below a little hill and found herself out of sight of the house. Surprised, bewildered, and homesick, she gave a pitiful little cry of "Mamma!" and was very well content to be led back to the bondage that meant love and safety. It seems to me that there is a suggestion here for the treatment of older children. Let the boy or girl who has reached the restless period of life take short flights out into the unknown world, giving him a chance to test his own powers and exercise his own judgment; he will come back all right, with an added love and appreciation for home. I like the way Aunt Joe managed the fiery Dan in "Aunt Joe's Boys."

You remember, no doubt, how the immortal George Washington rode his father's colt to death, which was bad for the colt, but better for George than going to sea, as he at first proposed doing. I often wish that boys in their teens could be set to breaking colts. It would furnish the muscular activity and mental excitement so much needed at this period of life, and give an opportunity to work off surplus energy and pent-up steam. But if he can ride nothing else, do let him ride his hobby, if he has one.

I was reading the other day of a mother who said she did not worry about John or Henry, but she did feel uneasy about Willie, because he had no hobby. She said if either of the other boys had a leisure hour or holiday they always knew just what to do with it; but Willie was always at the mercy of whatever happened to come along. So, do not discourage hobbies, even if there is some little expense connected with them that to you seems foolish. Better spend on chemicals, postage-stamps, or tools, than upon cigarettes and trashy literature.

Seek to give the child a chance to do the right thing from choice; then if he fails, let him suffer the natural consequences and thus early learn the lesson of cause and effect. Let him see and feel in all this that he has your sympathy and love, but do not be weak enough to step in to shield him from the consequences of his own deliberate wrong-doing.

A little child in school one day was given with the others a piece of colored paper to fold and paste. Failing to follow the teacher's directions, his paper was torn and spoiled. He immediately informed the teacher that his paper was spoiled, expecting to receive more. He was met with no reprimand for his carelessness, but only "I am sorry you have spoiled the paper I gave you." How could he more easily or with less cost and pain learn this life-lesson of care in the right use of gifts and possessions?

And now before closing I want to say just a few words about the strong willed child that is so often such a dread to parents and teachers because so hard to control. These are the children most likely to be misunderstood and wrongly dealt with—made of the finest material, requiring the greatest care and skill, but, like the hardest wood, difficult to manage, but strong, firm, and true, and most valuable. Really it is the amiable, docile child that should cause you the most anxiety, not the strong-willed child. The world needs people to-day and every day who are strong-willed enough to carry through discouraging reforms and all worthy undertakings. It is the rushing, plunging stream that has force to carry the sediment and refuse to the sea, to turn the mill, and to flow steadily on through the drouth of summer and the chilling winds of winter. Never think for a moment of breaking such a child's will; seek only to guide and direct it. Avoid as much as possible the arousing of a child's self-will or obstinacy. Make only reasonable demands, and always in a pleasant, courteous manner. Avoid direct commands, as requests should carry the same force, and are less likely to antagonize. Then if a child disregards your request you can often leave him the choice between two alternatives: as, be quiet or leave the table. Say "please," or go without the desired object.

How much may be accomplished by tact is well illustrated by an incident given in *The New Crusade*, of a child visiting her aunt. On the first day after the little girl's arrival, as she was playing out of doors in the early evening her aunt tapped on the window-pane and said pleasantly, "It is bedtime now. I want you to come in." The little girl faced her, and said, "Do you think I've got to come in because *you* say so? Huh! I won't do it." Her aunt tranquilly resumed her work, taking no further notice of the child. Gracie evidently looked for a show of indignation when she came in between nine and ten; but no notice was taken of her, and she went to bed flushed with victory. But the next night, immediately after tea, her aunt took her up to bed, saying kindly that she would be glad to let her play for an hour first, but she could not trust her to come in when she called her. The little girl looked thoughtful; but as soon as her aunt left she dressed herself again, went down to the yard, and was soon sporting about as wildly as ever. No attention was paid to her when she came in; but the next evening after tea she was again taken up to bed, and the door was locked. "If you lock me in," she exclaimed, "I'll tear the sheets and pillow-cases all to strips."

"Oh! just as you like as to that; only, of course, you'll have the same things on your bed to-morrow night, as I can't afford to have more than one set spoiled."

"Well, I can't bear to be left alone," said Gracie, beginning to cry in earnest.

"I ought to have thought of that," said her aunt. "Of course, then, I'll stay with you."

Then she talked to the child. She told her what a grand thing it was to have such a will. It is like riding a spirited horse that is carrying you fast in the right direction, but that an uncontrollable will is of no more use than a runaway steed. Instead of giving her the "good scolding" which most mothers would say she richly deserved, this sensible woman told her stories of strong willed girls who, in the face of terrible odds, had earned a living for poor and disease stricken parents, or achieved an education for themselves, or started some reform for others which they had victoriously carried through. "That's the sort of girl you will be, Gracie," she exclaimed. "A little girl like you must amount to something, either good or bad; and I say it will be good."

"I say it will be good too," exclaimed the sturdy little soul, sitting up in bed, and casting her arms about her aunt's neck. "I will try, Auntie; you'll see."

Such incidents as this make one feel that there is no case so difficult that might not be reached if we were only wise and true enough to touch the right spring of action. To this end and for this purpose we need to study child nature in general and each child in particular for the laws that govern action, for there are laws. Child-training is not a hit-and-miss work. The laws of cause and effect hold good

here as everywhere else in the world. We may not be able always to trace results to causes; but the more we look for it, the oftener it will be found, and help explain conduct that seems so inexplicable.

We had a little boy in our schools at one time who was always good when clean and well dressed, but willful and troublesome when untidy or wearing old ragged clothes. I was much interested not long ago in the account of a little child who refused to have her picture taken. Coaxing, threats, and punishment were all of no avail for a long time. At length she promised she would comply with their wishes if they would wait until after her birthday party, one week hence. This was agreed to, though what that had to do with it could not be imagined until she was overheard bidding her dolls good-by because she must have her picture taken and die, and go to heaven as her little cousin did. She did not want to die, she informed her doll, but mamma said she was naughty not to want to do as they wished. All this had come from her hearing the coincidence of her cousin's death, and the having had her picture taken just before, spoken of when on the floor with her blocks. The dear child had been adjudged willful and disobedient, when only ignorant and frightened.

We should do well, many times, to regard wrong-doing as a symptom and not a diseased condition, and endeavor to do as the good physician does—seek to discern and remove the irritating cause. In order to do this you must live with the children in the child's world, entering into their kingdom in as humble and teachable a spirit as a little child. You can then gain their trust and confidence, and will thus become their refuge and strength; and they in return will be your song of rejoicing, your crown of glory, your exceeding great and precious reward for time and eternity.

MAPLE-SYRUP LABELS.

In Ohio the law provides that every gallon of maple syrup offered for sale must be labeled, and bear the name and address of the producer. This is a precaution to guard against adulteration. We are prepared to furnish syrup-labels as follows:

3¾x5, to fit panel on can, with name and address printed—100, 40c; 15c per 100 after 1st 100. Postage, 5c per 100. Long enough to wrap around the can, 10c per 100 extra, and postage double the above.

OUR SEED AND POTATO CIRCULAR.

Send for seed catalog and potato circular. We have a nice stock of seed potatoes that we are offering at exceptionally low prices, while they last. We would call the attention of our Canadian subscribers to the fact that the postage on seeds to Canada is 1c per oz., and ask them to kindly send us 17c postage for their premium potatoes instead of 9c, as our home subscribers are are asked to do.

We have also added to our list of table beets the well-known Edmund's Early beet. This is handsome in shape, and a blood-red color, and has given the best of satisfaction in eastern markets. Price 5c per oz., 30c per pound; postage 9c per lb. extra.

BLACKWALNUTS AND SHELLBARK HICKORYNUTS.

We would again call the attention of our readers to the fact that we have nice blackwalnuts, already hulled, that we are offering at the low price of 15c per peck, or 50c per bushel. Nature has been bountiful in her gifts to us the past year, and the long winter evenings we are now having afford us a time for the enjoyment of some of them. These nuts can be included with other goods by freight at a trifling cost for transportation.

We have also succeeded in getting track of another small lot of shellbark hickorynuts, which we can offer, while they last, at 50c per peck or $1.60 per bushel. Send in your order early before they are all taken. Walnuts and hickorynuts are not a bad dish together.

HUBBARD SECTION-PRESS.

There are a great variety of devices for the purpose of putting together the one-piece section. Many have been submitted to us for trial. Among them all the Hubbard section-press stands unapproached in simplicity, ease of operation, effectiveness, and rapidity. Our help have repeatedly folded a box of 1000 sections in forty minutes, without breaking more than one or two. The bee-keeper who uses 5000 to 10,000 sections and over can not afford to be without one of these presses. They are adjustable for various sizes, but are, of course, sent out set for the 4¼ sq. section. We have so much confidence in the press, that, having the opportunity offered us recently, we secured the patent from Mr. G. K. Hubbard, now of Riverside, Cal. We now have exclusive right to manufacture, and shall be pleased to supply other dealers in bee-keepers' supplies who will list them in their catalogs.

HONEY MARKET.

We have engaged, and offer for sale at very favorable prices, the following lots of comb honey, and shall be pleased to hear from any interested.

1000 lbs. No. 1 white, in 24-lb. cases, in New York State. Will sell in 200-lb. lots at 12c, or the lot for 11½ cts.

600 lbs. fancy white clover in 12-lb. cases, and 200 lbs. buckwheat, in 12-lb. cases. Will sell the latter at 8½c for the lot—the clover in 200-lb. lots at 13c, or the lot at 12½ cts.

We have also three lots in Michigan, consisting of 1500 lbs. fancy and No. 1 white, in 12 and 16 lb. cases, which we offer at 12c per lb. in 200-lb. lots.

1500 lbs. amber, which we offer at 10c per lb., and 500 lbs. buckwheat, which we will sell at 8½c per lb. in 200-lb. lots, or 8c for the lot.

Of extracted honey in stock here we offer two 60-lb. cans of Florida mangrove honey at 6c per lb.; 5 cases choice Texas honey at 6c by the case; what we have left of alfalfa (a few cans) at 6c per lb. by the case, or in 1-gallon cans, 6 in a case, at $4.50; choice willow-herb in 60-lb. cans, 2 in a case, at 7c; some good amber honey at 5c. We have also a barrel, 500 lbs., of amber honey, in New York State, which we offer at 4½c per lb., and some buckwheat honey in 60-lb. cans at 4½c by the case of 2 cans. Choice basswood honey in Wisconsin, in 500-lb. barrels, is offered at 5¾c, and in 60-lb. cans at 6c. Samples of any of these lots mailed to those interested.

SPECIAL PRICES TO CLOSE OUT STOCK.

We have in stock at Baltimore, Md., the following items of stock which we desire to close out, and are willing to do so at a special price rather than have it returned. If you can use any of it let us hear from you promptly; or, if more convenient, call on or write to Rawlings Implement Co., 209 So. Charles St., Baltimore, Md.

Six 10-lb. boxes extra thin foundation, offered at $5.00 a box.

Three 20-lb. boxes light brood foundation, L. size, offered at $8.00 a box.

2 crates, 50 each 24-lb. single-tier shipping-cases, no glass, paper, or nails, $4 00 a crate.

1 crate, 50 12-lb. single-tier shipping-cases, no glass, paper, or nails, $2.50 a crate.

100 winter cases which we will sell at $5.00 for 10 or $40.00 for the 100.

10 cases of two 5-gallon sq. cans, offered at $6.50.

70 one-gallon square cans, offered for $6.30.

3 comb-buckets, offered at $1.00 each.

2 Hubbard section-presses, at $2.25 each.

5 Swiss wax-extractors, offered at $2.25 each.

3 sheets 28x96 zinc, at $1.10 per sheet.

These are, of course, special prices, offered only while they last.

We have also at Good Hope, Ohio, the following nailed and painted hives, made a few years ago:

4 No. 1 Dove. hives with flat covers, and 2 with gable covers, complete, offered at $1.00 each, or $5.00 for the 6.

6 No. 11 Dove. chaff hives, complete, at $1.50 each, or $7.50 for the 6.

1 No. 7 Simp. hive, two-story, for $1.00.